THE GARDEN MAGAZINE

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Devoted to Planting and Managing the Grounds About the Home and to the Cultivation of Fruits, Vegetables and Flowers

Volume XXXIV

September 1921 to February 1922

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INDEX TO THE GARDEN MAGAZINE

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An asterisk (*) signifies that the article is illustrated

Acer saccharam, 293*
Adams, H. S., article by, 46, 48, 103, 328
Adiantum Farleynse, 31*
A. H. B., article by, 328
Alderson, Lillian C., article, plan, and photograph by, 248*
Alpine Plants into our Gardens, Bringing, 316*
  Lessons of a Life-time With, 319*
  Peculiar Needs of, 316*
Among Our Garden Neighbors, 45, 101, 157, 208*, 259, 325*
Andrews, Mrs. E. B., garden of, 10*
Andromeda speciosa, 103
Anemone japonica, 10*
Annual Border, 295*
  Flowers from Seed in the West, 185
  Two Unusual, 315
  What, Why, and How Much, 294*
Applegate, Mrs. W. W., article by, 46
Apples, Fertility of, 350
Arabis alpina, 14*
Arbor, Rose, 27*
Arid Places, Landscape Gardening in, 104
Arnold, W. I. D., photograph by, 11*, article and photograph by, 32*
Arthur, G. B., article and drawing by, 138*
Audubon Society, National, photograph supplied by, 74*

Balance in the Gardens, 189*
Barron, Leonard, article by, 34*, 298*; article and photographs by, 25*; photographs by, 145*, 146*, 290* 319*
Basket, Convalescent's, 190*
  for the Busy Gardener, 190*
  Fruit and Flowers, 190*
Bastin, S. L., article by, 47
Beans that Rival Jack's Beanstalk, Pole Lima, 327*
Benners, Mrs. William H., article by, 261
Berries for Ornament or for the Birds? 261
Bingham, Frank M., article by, 327
Bird-bath in Appropriate Setting, 69*
  Garden Clubs' Suggestions for, 100*
  Sheltered, 75*, 76*
Birds and Vegetables vs. Cats and Caterpillars, 93
  Berries for Ornament, or the, 261
  Books for the Gardener, 116
  Chickadee, October Cover
  For the Love of, 102
  Inviting the, 74*
  Planting for, 77*
  vs. Crops, 209
Bishop, Robert F., article by, 48
Blackberry Canes, Cutting Out, 83*
  Giant Himalaya, 47, 328
Blair, C. L., Garden of, 127*
"Blanket Flowers" and Fuchsias, As to, 158
Blenn, Frederick O., photographs by, 246*, 247*
Bloom for the California Garden, Continuous, 177
Bluebell, English, 14*
Books Current and Standard, 28
  for the Gardener, Bird, 116
Border, Annual, 295*
  Making the Most of the Herbaceous 17*
  Perennial, 309*
  Plan for Spanish, 204*
  Planting, 236*
Botsford, Amelia H., article by, 46, 103
Box-Huckleberry Discovered, Large Patch of Rare, 103
Boxes, Fill Your Empty Window, 162
  Perennial Window, 48
  Window, 291*
Breeze Hill, IV, Walks and Talks at, 42*; V, 258; VI, 314
Broomall, J. J., portrait of, 193*
Brown, Lew, article by, 120
Brown, Mrs. W. F., article by, 102
Bulbs, Early Spring, 14*
  Getting the Best Bloom from the 78*
  Mass Planting, 81*
  Winter Housing of, 88
Busch Gardens, 175*
Bush, C. G., article by, 260
Button, H. F., article by, 108*

Cabbage, Heading During Winter, 120
Caldwell Co., Inc., J. E., photograph by, 191*
California, Continuous Bloom in, 178*
  Dahlia in, 195*
  Easterner Gardening in, 178*
  Gardens, December Number
  Spanish Border for, 204*
  Reminder, 12
Camellia Collection of W. R. Coe, 290*
  Reconsidering the, 298*
Campbell, Frank W., article by, 158
Campbell, John Collins, article and diagrams by, 254*
Canterbury-bell and Delphinium, 132*
Caraway, Mrs. H. R., article by, 48
Carnation Cuttings, When to Make, 260
Carya ovata, 95*
Castanea pumila, 42*
Cats and Caterpillars vs. Birds and Vegetables, 93
Caughey, Rachael, article by, 161
Cauliflower, Possibilities of Potted, 106
Chamberlain, John W., article by, 106
Chanler, Miss, garden of, 9*
Chestnuts, 97*
Chicago, Milwaukee & St. Paul Ry., photograph supplied by, 70*
Chinquapin (Castanea pumila), 42*
Christmas Gifts for the Gardener, 140*
Christmas Rose, 92*
Chrysanthemum in Decorative Treatment, 137*
  the Flower of November, 136*
  to the Land of Its Inheritance, Following the, 133*
City Gardens, 38*, 227*
  Continuous Bloom in the, 248*
Climate, The Gardener and, 208*
Cobb, Irwin S., Gardens of, 202*
Coe, W. R., Camellia, Collection of, 298*
Cold on Plants, Effect of, 325*
Coldframe, Cellar Window, 148*
Colgate, A. E., photograph by, 190*
Collins, J. L., article and photographs by, 40*, 152*
Color in Winter, Evergreens that Hold, 90*
Colton, Arthur W., articles by, 187*, 250*
Columbine, January Cover
Continuous Bloom in the City Garden, 248*
Copenhagen Royal Porcelain, Danish Arts Inc., photograph by, 190*
Corfield, H. J., article by, 261
Correvon, Henri, article by, 316*
Corylus, 95*
Couch, Scutch, Twitch or Quitch Grass, 158
Counting the Sunny Hours, 138*
Cover Designs, September, Summer garden, Birch Long; October, Dogwood and Chickadees, Frederick G. Mories; November, Zinnias, Felicie W. Howell; December, Mission Gate, C. L. McQuaid; January, Columbine, F. B. Widder; February, Mixed Bouquet, Frank Galsworthy
Crops vs. Birds, 209
Cucumber Mosaic, 108*
Cultivators, Automotive, 322*
Cypress, Monterey, 180*

Dahlia's Apotheosis in the Sunset State, 195*
  Break o'Day, 196*
  Durnbaugh, 145*
  Emperor, 145*
  Gladys Sherwood, 147*
  Grizzly, 145*
  Insulinde, 146*
  Most Artistic? 209
  Osam Shudow, 196*
  Rosa Bonheur, 147*
  Trend of the, 145*
  What America Has Done for the, 192*
  Wizard of Oz, 147*
Damage by Ice to Trees, 293*
Daniels, Mark, article by, 181*
Davis, Florence Boyce, poem by, 301
De Cou, Branson M., photographs by, 175*, 195*
Deehan, J. J., article by, 260
De La Mare Co., photograph by, 22*
Delphinium and Canterbury-bells, 132*
  Seeds, Germination of, 48
  Yellow, 260
Doan, John L., article by, 323*
Dogwood, October Cover
Driscoll, Louise, poem by, 85*, 144
Dunbar, John, article by, 47

Echoes from the Pacific Coast, 326
Edgar, Mrs. Newbold, garden of, 18*
Egan, W. C., article by, 327
Eldredge, Arthur A., photographs by, 47*, 71*, 79*, 80*, 81*, 82*, 91*, 127*, 139*, 318*
Ellison, Thomas, photographs by, 126*, 150*, 151*
Eucalyptus as an Accent Point, 173*
  ficifolia, 199*
  globulus, 200*
  Picturesque Values of, 199*
  rostrata, 200*
Evergreens that Keep Green in Winter, 90*

Fall Planting, 72
Farmer, Jennie, article by, 326
Farquhar, J. K. M. L., and the Poet's Narcissus, 34
Farrington, E. I., article and photographs by, 29*, 83*, 99*
Fedder, Raymond L., article and photograph by, 327*
Fern, Australian Tree-fern, 31*
  Bird's-nest, 31*
  Growing in the Home, 29*
  Maidenhair, 31*
  Popular Boston, 29*
  Roosevelt, 29*
Fernbach, Agnes, drawing by, 154*
Fig, Creeping, 30*
Findley, D. F., article by, 262
Flower Holders, 190*, 191*
  Painters that Really Paint Flowers, 260
  Painting, February Cover and 260
  Shows, March's, 326
  That Thrive in a Clay Soil, 106
  When Drought Makes, 162
  Why Do People Paint, 300
Forbes, P. H., article by, 328
Forestry Assoc., American, photographs by, 95*
Fountain, Table, 190*
  Wall, 38*
Fowler, Clarence, photographs by, 38*, 39*; article by, 302*; article and photographs by, 17*
Frary, F. M., photograph by, 184*
Freesias, Forcing, 21*
Frelinghuysen, Mrs. Frederick, garden of, 20*
Frosts, Water Wards Off, 97
Fruit, If You Are Growing, 83*
  Increase and Better the, 152*
  Picking from High Trees, 102*
  Pollination of, 98*
  Table of Approximate Yields of, 324*
  What, Why, and How Much, 323*
  Why Fruits Don't Fruit, 98*
Fruit planting for the home, 323
  pollination of, 98*
Fuchsia, 42*
  Secret, The, 263
  Where to Get, 158

Galsworthy, Frank, Cover Design, February
  article by, 300
Garden at "Arrow-Wood," 308*
  Balance in, 189*
  Beautiful within Prison Walls, 197*
  Beauty in the Little, 245*
  Birds, poem, 85*
  Continuous Bloom for the California, 177; City, 248*
  E. A. Woods, 86*
  Early Spring, 14*
  House that Was Built for a, 187*
  Indoor, 291*
  My Los Angeles Suburban, 206*
  Old-fashioned, 130*
  Pictorial History of, 237*, 311*
  Pidgeon Hill, 241*
  Pool, 188*
  Rebel Ridge, 202*

Rock, 27*, 302*, 318*
Sixteenth Century Herb, 142*
Spanish Border for California, 204*
Statuary in the, 188*
Stonecroft, 149*
Suburban, in Los Angeles, 206*
Table, 27
Truth About a, 354
Wall, 127*
Water in the Mid-West, 256*
Gardener Builds His Home, When the 242*
Christmas Gifts for the, 190*
From a Texas, 261
Gardenesque Treatment of Interiors 243*
Gardening, Ecstatic vs. Static, 259
for a Spring Start, Winter, 148*
in Arid Places, Landscape, 104
on Different Soils, 262
Gardens, of Ancient India, 35*
Avenue A, 264*
California, December Number
City, 38*, 227*, 245*
Planting Tables for Western, 185, 186
Shore Line, of the Pacific, 181*
Speaking of, poem, 301
Turtle Bay, 227*
Water, of India, 35*
Gate, Mission, San Juan Bautista Mission, Cover Design, December
Vistas of the Golden, 182*, 183*
Gateway, Fascinating, 25*
Gaylussacia brachycera, Discovered, 103
Geraniums, The "Bird's Egg," 260*
G. H., article by, 103
Ghent, W. J., article by, 206*
Gibson, Henry, article by, 78*
Gillies, John Wallace, photographs by, 225* 227*
Golden Cup that Cheers in Spring, 32*
Goodwin, Frank E., article by, 47
Gorham Co., photographs by, 190*, 191*
Gould, Albert R., article by, 177
Grape Arbor in Illinois, 47*
Vines, What Lime Will Do for, 327
Grapes in My Garden, 46
Graves Co., Nathan R., photographs by, 9*, 69*, 76*, 92*
Greenfly, Carbide Gas for, 47
Greenhouse Interior, 71*
Into a Rockery, Converting, 328
Walls, Draping the, 30*

Hare, Mrs. Meredith, Garden of, 241*
Hargreaves, Sheba Childs, article by, 143
Hart, Derrill W., article by, 23*
Hatfield, T. D., article and photograph by, 293*
Heacock, Esther, photograph by, 74*
Healy, Harry G., photograph by, 125*, 203*, 302*
Hedge Clipped by Machinery, 47
Rosa Lucida as a, 103
Heilner, Mr. Samuel, garden of, 19*
Helenium autumnale, 43*
Riverton beauty, 160*
Helleborus niger, 92*
Herbaceous Border, Making the Most of the, 17*
He Saved the Poet's Narcissus, 34
Hewit, Mattie E., photographs by, 10* 17*, 39*, 75*, 131*, 226*, 230*, 243*, 289*, 290*, 299*
Hinckley, Julian, article by, 159
History of the Garden, Pictorial, 237* 311*
Holders, Flower, 190*, 191*
House that Was Built for a Garden,
I. "Havenwood," Home of Edward L. Ryerson, 187*
II. Charles A. Platt's Adaptation of Italian Style to American Spirit, 250*
Hovey, Charles Mason, portrait of, 192*
Howell, Felicie Waldo, Cover Design, November, by
How Much Does Watering Help? 45
Hubbell, Lucy Embury, article by, 28, 116
Humans, Sowing the Seed in, 264
Hunter, Grace H., article by, 354
Hyacinths, 80*
Wood, 14*

Ice in New England, Trees Destroyed by, 293*
Storms, Trees that Best Resist, 103
Increased Crops through Use of Hybrid Seed, 40*
Indian Basket Grass, 70*
Iris, Eradicating Rot from, 46
How I Force, 159
Italian Reader, article by an, 326
It Came at Christmas Time Too! 326

Jack Frost not so bad as He is Painted, 325*
J. C., article by, 158
Jekyll, Gertrude, article by, 304
Jewell, Cora, article by, 262, 326
Johnston, Frances B., photograph by, 132*
Jones, D. F., article and photographs by, 98*

Keeler, Lucy Elliot, article by, 14*
Kerr, George W., article and photographs by, 155*
Kift, Jane Leslie, photograph by, 190*; article and photograph by, 307*
Knoch, A. A., article by, 46
Kruhm, Adolph, articles by, 230*, 294*; photographs by, 23*, 147*, 322*

Landscape Gardening in Arid Places, 104
Lane, Bernard H., article by, 46
Larkspur, Californian Red, 46
Laughlin, E. V., article by, 89
Lawn, Beauty of the Well-Made, 254
Fertilizing the, 254
Grading the, 254
Making, 254*
Soil Preparation for, 254
Leaf Mold, Supplying the Indispensable, 103
Levick, Edwin, photographs by, 100*
Lide, J. H., article by, 159
Lilies in Scotland, Japanese, 263*
that Bloom Successively, Lemon, 103
Lillium auratum, Increasing, 161*
Is This the Largest, 161*
Vigor of, 261
Lily, Regal, for Easter Forcing, 99*
for Everyman's Garden, 99*
from Seed, 99*
Yellow Day-lily, 159*
Limas that Rival Jack's Beanstalk, Pole, 327*
Lime Will Do For Grape Vines, What, 327
Long, Birch, Cover Design, September
Lown, Clarence, article by, 319*
Lymbery, Elizabeth, portrait of, 193* article by, 195*

MacDougal, D. T., article and photograph by, 305*
Manchester, H. H., article, and illustration supplied by, 142*, 237*, 311*
Maple, Sugar, Destroyed by Ice, 293*
Marean, Josiah, portrait of, 193*
Markey, Bettie, article by, 104, 264
McCauley, Lena M., article, and photographs supplied by, 245*
McCrae, Lee, article by, 104
McFarland, J. Horace, articles by, 42*, 158, 258, 314; McFarland Co. the J. Horace, photographs by, 42* 43* 291* 305*
McGregor, Florence L. C., article and photograph by, 103*
McQuaid, C. L., Cover Design December, Mission Gate
Medlar, Find the, 262
Mertensia virginica, 47*
Metcalfe, James A., article by, 264*
Mill, The Old, in Busch Gardens, 175*
Miller, Walter, photograph by, 196*
Mitchell, Sydney B., article and plan by, 204*
Mole Nuisance, Mitigating the, 105
That Terrible Pest the, 46
Too Much for the, 264
Montague, Mr. and Mrs. S. S., Gardens of, 308*
Month's Reminder, 12, 72, 128, 176, 228, 292
Morris, Hilda, poem by, 255
Moulin, Gabriel, photographs by, 173*, 174*, 182*, 183*
Moulton, Robert H., articles and photographs by, 159*, 325*
Mulford, Misses, Garden of, 131*
My Los Angeles Surburban Garden, 206*

Narcissus, Circlet, 33*
in the Garden, 32*
King Alfred, 32*
Lord Kitchener, 32*
Masterpiece, 33*
Naturalistic Planting, 11*
Poet's, 34*
Queen of the North, 33*
Neighbor, An Appreciative California, 262
Nephrolepis exaltata, 29*
Norton, J. B. S., article by, 192*
Nut, Hazel, 94*
Shagbark Hickory, 95*
Trees, By All Means Plant, 94*
Nye, Henry C., article by, 103

October's Meaning to the Gardener, 97
Olive, Charles, article by, 88, 106
On Reading a Seed Catalogue, poem, 254
Open Column, 46*, 102*, 158*, 209*, 260*, 326*
Orchard to Beauty, Converting, 289*

Padrick, J. R., article by, 104
Pansy Growing in the South, 104
Paramount Pictures, photographs by, 241*
Parry, Edward H., article and photographs by, 74*
Patch, Edith M., article by, 93
Patio in California, 179*
Pea, Glory, as a House Plant, 48
Peake, Harvery, drawing by, 143*
Peas, Preferences in Perennial, 104
Pentstemons, Two Rocky Mountain, 332*
Peonies in Texas, 263
Raising Seedling, 159
What are the Best, 158
Perennials, Bloom in Late Summer, 48
Garden Corner, 76*
Making the Most of, 17*
Questions, Some, 326
Yellow, 159
Late Yellow, 46
Winter Quarters for, 88*
Persimmon, The Japanese, 102*
Phlox in Profusion, 9*
Pictorial History of the Garden,
I. At the Dawn of History, 237*
II. In Egypt Thirty Centuries Ago, 311*
Pitcher, James R., article by, 209
Pitkin, Jr., William, Garden Designed by, 149*
Plan for a City Garden, 248*
Little Gardens, 246*
Making a Garden, 233*
Spanish Border, 204*
Planting, Fall, 72
for Birds the Year Through, 77*
Tables for Western Gardens, 185*
Plants are Brought Indoors, When, 157
Behave at the Seaside, How Mountain, 305*
Effect of Cold on, 325*
Improvements, 304
Introducing Little-known, 328
Landscape Use, Native, 47
New Craft of Making, 40*
that Don't "Come True," 327
to Order, New Craft of Making, 152*
Pleas, Sarah A., article by, 104*, 159
Plowing, Good Results from Fall, 89
Pollination of Fruit, 98*
Polyanthus, Gold-laced, 15*
Pool in the Garden, 188*, 225*, 241*, 252*
California Garden, 178*
September Cover
Preacher Practising His Precepts, 25*
Primrose, "Bunch," 305*
Munstead, Making of the, 304
Primula malacoides, 307*
Sieboldi, 15*
veris superba, 15*
Prison Walls, Garden Beautiful within, 197*
Pruning and Spraying for Increased Yield, 97

Quarantine 37, Where are the Friends of, 263*
Queen, Maud A., article by, 158
Queries from Indiana, 262

Rabbit, Idiosyncrasies of the, 327
Raspberry, Saving La France, for Posterity, 161
Mulched for Winter, 84*
Rawlinson, Anne Cochran, article by, 104
Reardon, Joseph B., article by, 328
Reminder for California, 12
The Month's, 12, 72, 128, 176, 228, 292
Rhubarb all Winter, Enjoying Fresh, 262*
Richard, L. Vinton, article by, 326
Ries, Estelle H., article and photograph by, 242*
Robin and the Cherry, the, 161
Robinson, William, Garden of, 25*
Rock Gardens, 316*
Elusive Beauty in the, 302*
Plants and Alpines Raised from Seed, 320
Rockery, Converting the Greenhouse into a, 328
Roe, A. W., article by, 297
Romance of St. Valentine, 307*
Rome to Texas, From, 326
Roots and Bulbs, Winter Housing of, 88
Rosa Lucida as a Hedge, 103
Rose, Caroline Marinesse, 103
Garden in Oregon, 308*
La Marque, 102
Old-fashioned Double, 125*
Rose, K. A., article by, 262
Roses Instead of Weeds, 159*
Rutledge, Archibald, articles by, 106, 162, 327
Rutner, Mary, article by, 162
Ryerson, Edward L., Gardens of, 187*

Sakamoto, Kiyoshi, article and photographs by, 133*
San Quentin Prison, Garden in, 198*
Scheepers, John, photograph supplied by, 21*
Schroeder, Mrs. A. E., garden of, 39*
Scilla Lispanica, 14*
Scoundrel in Stripes, 108*
Seaside, How Mountain Plants Behave at the, 305*
Seed, Annual Flowers from, in the West, 185
Increased Crops through Use of Hybrid, 40*
in Humans, Sowing the, 264*
Raising Alpine and Rock Plants from, 320
Sowing for an Early Start, 310*
Seymour, E. L. D., article by, 21*, 105, 161
Shaw, Howard Van Doren, photographs by, 188*, 189*

Sheppard, Cora J., article and photograph by, 262*
Shockey, G. H., article and photograph by, 260*
Shore Line Gardens of the Pacific, 181*
Shrub, A Fine American, 103
Simkins, Velma, Drawings by, 12, 72, 128, 130, 176, 292
Simpling, Gentle Art of, 143
Slater, E. W., article and photographs by, 35*
Sloan, Henry W., article and photographs by, 161*
Slocombe, J. H., portrait of, 194*
Smith, Andrew N., article by, 263
Smith, Joe, article by, 48
Smith, Mrs. Donald, article by, 48
Snails, Trapping, at Night, 46*
Snow, Mrs. Frederick A., garden of, 17*
Snowdrops in Early Spring, 80*
Soil Betterment, 315
Conservation, 97
Flowers that Thrive in a Clay, 106
Triumphing over a Foundation, 48
Speaking of Gardens, poem, 301
Sperry, Lu Wilson, article by, 158
Spirea and Golden-bell, 15*
Spirit and the Letter, 326
Spraying and Pruning for Increased Yield, 97
Spring, My Gallant Garden of Early, 14*
Stack, Garrett M., article and drawing by, 102*
Stanton, Carl, article by, 88*
article and plans by, 233*
Stapleton Mrs. Leila B., article by, 622
Starr, I. T., garden of, 251*
Statuary in the Garden, 188*
Steed, Thomas J., articles by, 185, 186
Strawberry Crops, Increasing by Mulching, 106
Street Planting of Roses, 159*
St. Valentine, The Romance of, 307*
Summer that's Gone The, 101
Sun-dial, Artistic, 190*
for the Gardener's Christmas, 140*
Garden City, 139*
How to Lay Out the, 138*
Sweet-peas for Easter, 155*
Growing, 297
in the Greenhouse, 156*
Syringa pubescens, 42*

Tattersall, E. W., article and photograph by, 263*
T. A. W., article by, 328
Taylor, A. D., photographs from, 256*
Theiss, Lewis E., article by, 48, 94*
Thomas, W. A., gardens of, 256*
Thorne, Helen S., article by, 178*
Tomatoes for Christmas, Saving, 97
Tools, Automotive Cultivator, 322*
Trees Destroyed by Ice in New England, 293*
that Best Resist Ice Storms, 103
Tulips, Failed for Twenty Years with, 104
Favorites, Talking About, 23*
Informal Edging, 79*, 82*
Turtle Bay Gardens, 227*

Valentine Flower Suggestion, 307*
Vegetable Plot, Home, in the West, 186
Vegetables, Table, What, Why and How Much Among the, 230*
Vincent, Jr., Richard, portrait of, 193*
Violet Lady," From the "White, 48
Virburnum theiferum, 42*
Vistas of the Golden Gate, 182*, 183*

Walbridge, William S., Garden of, 126*, 149*
Walk, Flagstoned, 179*
Scotch Fir Planted, 26*
Walker, Robert S., article by, 162, 332*
Walks and Talks at Breeze Hill,
IV. 42*
V. 258
VI. 314
Wall, Garden, 127*
Wallis, E. J., photograph by, 137*
Walnut, Arizona, 306*
Seedling, 95*
Walter, F. A., photograph by, 303*
Water in the Mid-West Garden, 256*
Wards Off Frosts, 97
Watering Help? How Much Does, 45, 158, 328
We are Grateful and Encouraged, 158
Webb, L. H., photograph by, 47*
Weston, T. A., article by, 350
What, Why, and How Much among the Table Vegetables, 231
Among the Accommodating Annuals, 294*
Fruit to Plant, 323*
When an Easterner Gardens in the Golden West, 178
When to Do What You Want to Do, 12, 72, 90, 128, 176, 228
White, Mrs. Linn, garden of, 245*
Whitman, Roger B., photograph by, 298*
Whitney, Mrs. Harry Payne, Garden of, 225*
Why Do People Paint Flowers? 300
Wickson, E. J., article by, 326
Widder, F. B., Cover Design by, January
Wilder, Louise B., article by, 320
Williams, Mrs. Charles R., article by, 103
Wilmore, W. W., portrait of, 194*
Wilson, H. F., article by, 158
Wilson, W. L., article and photograph by, 148*, 310*
Window Boxes, Perennial, for Winter, 48
Winkler, Paul, article by, 158
Winter Pansies (poem), 144
Wisteria Vine, 253*
W. J. N., article by, 261
Woodman, Allison M., article and photographs by, 199*
Woods, E. A., Garden of, 86*
W. T. A., article by, 47
Wynne, Mrs. Thos. A., article by, 264

Xerophyllum tenax in Paradise Park, 70*

Planting for Spring Flowers Shrubs Herbaceous Perennials

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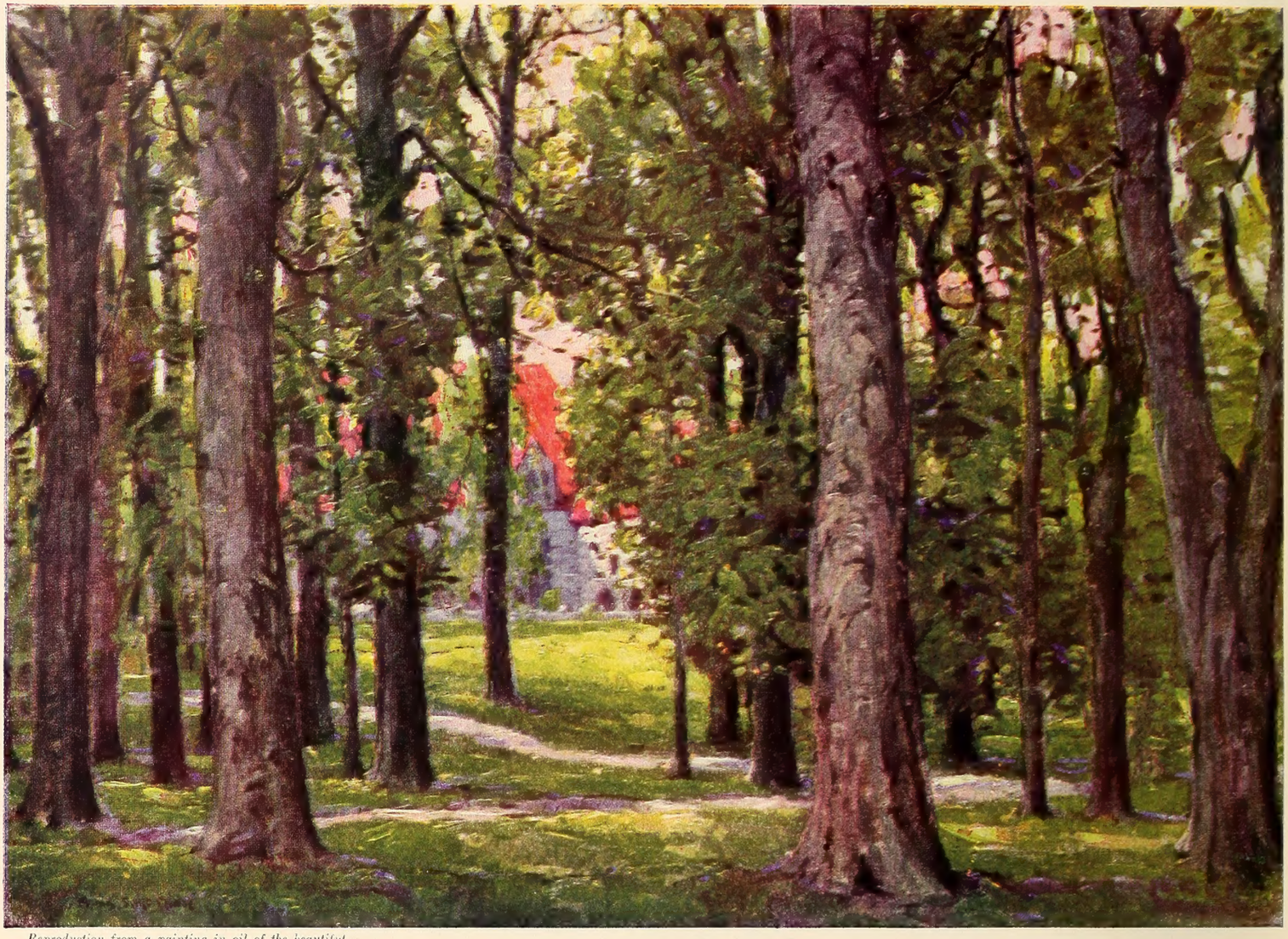

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OFTEN an estate owner is puzzled to find some of his magnificent trees slowly dying—without apparent cause. Little does he suspect that, in spite of abundant rainfall, they may be dying of *thirst!*

Nine times out of ten a thick layer of earth or heavy sod will kill trees; almost always the serious maiming of roots in landscape alterations prove fatal. Denied moisture or air at the roots, the staunchest trees will literally die of thirst or smother to death. Only one thing can possibly save it—a real Tree Surgeon *quick* at first signs of danger.

Just as stealthily and surely, decay kills trees. The top may appear in perfect health, the leaves green—but the merciless decay is at work inside the trunk, hidden from the untrained eye. Then reduced to a hollow shell, any severe storm may crash it to the ground without warning.

Are your trees as healthy and strong as they *seem* to you? You owe it to yourself to make certain *now* and if necessary, to give them correct treatment. A careful examination of your trees will be made by appointment.

Davey Tree Surgeons offer you the utmost in scientific Tree Surgery enriched by a generation of wide practical experience. They offer the assurance of an organization of established stability whose members honor a fine tradition of conscientious service. Illustrated booklet sent upon request.

THE DAVEY TREE EXPERT CO., INC., 1209 Elm St., Kent, Ohio

Branch offices with telephone connections: New York City, Astor Court Bldg.; Chicago, Westminster Bldg.; Philadelphia, Land Title Bldg.; Boston, 449 Main St., Wakefield; Baltimore, American Bldg.; St. Louis, Central National Bank Bldg. Write nearest office.

Permanent representatives available in districts surrounding Boston, Springfield, Lenox, Newport, Hartford, Stamford, Albany, Poughkeepsie, White Plains, Jamaica, Long Island, Montclair, New York, Philadelphia, Harrisburg, Baltimore, Washington, Richmond, Buffalo, Toronto, Pittsburgh, Cleveland, Detroit, Cincinnati, Kansas City, Louisville, Indianapolis, Chicago, Milwaukee, St. Louis. Canadian address, 252 Laugauchitere West, Montreal.

DAVEY TREE SURGEONS

Every real Davey Tree Surgeon is in the employ of The Davey Tree Expert Co., Inc., and the public is cautioned against those falsely representing themselves. An agreement made with the Davey Company and not with an individual is certain evidence of genuineness

Fall Planting of LILACS

Stands for

Assurance of Spring Bloom

You will find the new Lilac Hybrids revelations in floral beauty and you may enjoy their flowers *next Spring*, if planted during the Fall Months. Gradually we have gathered a great collection, comprising the masterpieces of European hybridizers. Most of them bring us delightful shades in pink, lilac, lavender, and purplish red, as well as white in both single and double forms. Some of them are particularly attractive when open flowers and buds of contrasting colors combine to produce charming effects. And all are easily grown.

Cottage-Garden-Grown Lilacs

Grown with particular care, properly cultivated and pruned, Cottage-Garden-Grown Plants come to you ready to perform! Every one a specimen plant, they should make a creditable display in your garden the very first season. We herewith offer twelve of the finest:—

Our Special Offer of 12 Beautiful New and Rare Lilacs

SINGLES			DOUBLES		
Vestale	Pure White	$4.00	Jeanne de Arc	White	$3.00
Milton	Violet	3.00	Jules Ferry	Pale Mauve and Pink	2.00
Leopold II.	Clear Mauve	3.00	Victor Lemoine	Azure Mauve	3.00
President Lambeau	Clear Lavender Blue	3.00	Waldeck Rousseau	Pale Pink	3.00
J. D. Messmaker	Vinous Red	2.00	De Saussure	Purple Red	4.00
Leon Mathieu	Violaceous Blue	3.00	Duc de Massa	Clear Violet	3.00
				Total	$36.00

We commence shipping Lilacs about October 1st. But send in your orders NOW.

We will furnish the above collection complete in fully matured 3 to 4 ft. bushy plants for $28.00—the 6 singles for $15.00 or the 6 doubles for $15.00.

Lilac Booklet (and others) on Request

Nearly 100 distinct Lilacs including novelties of proved merit are offered. Our special booklet on Peonies for present planting speaks for one of the most comprehensive collections of these Hardy Perennials. A Rhododendron Booklet for those interested. All of these booklets will be sent free on request.

Cottage Gardens, Inc., Nurseries

Queens, L. I., New York

Now then, altogether—

Let's Plant PEONIES

At last we are face to face with *the* opportunity of the year! And we can truthfully say that never before in the history of our business have we been better prepared to properly care for your orders, than this season.

We recall the glories of our acres, last June. We remember the avalanches of beauty that nearly swept us off our feet. And we are ready now to share *Peonies* with you. If we have what you want, among our 500 varieties, you are welcome to it at reasonable prices.

For those in search of

The Superlative

Claire Dubois. A rich satiny pink with glossy sheen. Will *never* be common.
Karl Rosenfield. Among the finest of American-bred and raised masterpieces. Brilliant, velvety crimson.
Mont Blanc. As illustrated above, is one of the rarest, after many years. Milk white center; tinted rose. Fragrant.
Sarah Bernhardt. Lovely apple-blossom pink, each petal silver-tipped. Petals beautifully twisted and curled.

SPECIAL OFFER One each of above superlatively beautiful varieties will be sent for **$16.00**

Five Floral Masterpieces

One and all a triumph of the hybridizer's skill

Avalanche. Pure snow white.
Albert Crousse. Sea shell pink.
Asa Gray. Lilac, with salmon-pink guard petals.
Modele de Perfection. Violet rose and flesh pink shades.
Monsieur Jules Elie. Lilac pink shading to rose.

SPECIAL OFFER One of each of above five masterpieces will be sent for **$5.00**

Four Admiration Challengers

Every one guaranteed to make you feel proud you own it.

Marie Stuart. Soft white with lilac tints.
Couronne d'Or. The famous "Crown of Gold."
Madame de Vatry. Lilac-white guard petals, sulphur white collar, center striped carmine.
Marechal Valliant. Immense, light red, shaded mauve.

SPECIAL OFFER One of each of four beautiful creations will be sent for **$3.00**

Let "Peonies for Pleasure" Help

This beautiful booklet "De Luxe" holds a great treat for every Peony admirer. It will properly introduce you into the land of Peonies, give you lots of facts, some fancies and helpful cultural notes, together with unbiased opinions of our Mr. John Good who has made a life study of Peonies. Since the supply of this treatise (*not* a catalogue) is running low, we would appreciate your referring to Garden Magazine when asking for it.

Good & Reese Co. Largest Rose Growers in the World
Dept. D., Springfield, Ohio

SEPTEMBER, 1921

THE GARDEN MAGAZINE

CONTENTS

COVER DESIGN: LATE SUMMER GARDEN - - - - *Birch Long*

PAGE

MIXED BORDER FOR CONTINUOUS EFFECT - - - - - - - 9
Photograph by Nathan R. Graves Co.

JAPANESE ANEMONE, A NATURALISTIC PLANTING - - - 10
Photograph by Mattie Edwards Hewitt

DAFFODILS IN EARLY SPRING - - - - - - - - - - - - 11
Photograph © Chester J. Hunt

THE MONTH'S REMINDER—WHEN TO DO WHAT YOU WANT TO DO - 12

THE CALIFORNIA REMINDER - - - - - - - - - - - - 13

MY GALLANT GARDEN OF EARLIEST SPRING *Lucy Elliot Keeler* 14
Photographs by Arthur G. Eldredge, E. W. Tattersall and others

MAKING THE MOST OF THE HERBACEOUS BORDER *Clarence Fowler, A. S. L. A* 17
Photographs supplied by the author

THE FASCINATING ART OF FORCING FREESIAS *E. L. D. Seymour* 21
Photographs supplied by the author

TALKING ABOUT TULIP FAVORITES - - - - *Derrill W. Hart* 23
Photographs by Adolph Kruhm

THE PREACHER PRACTISING HIS PRECEPTS *Leonard Barron* 25
Photographs by the author

BOOKS CURRENT AND STANDARD - - *Lucy Embury Hubbell* 29

GROWING FERNS IN THE HOME - - - - - - *E. I. Farrington* 29
Photographs supplied by the author, by N. R. Graves Co., and A. G. Eldredge

THE GOLDEN CUP THAT CHEERS IN SPRING *William E. Irwin Arnold* 32
Photographs © Chester J. Hunt and others

SO-CALLED "GARDENS" IN ANCIENT INDIA - *E. W. Slater* 35
Photographs supplied by the author

LOOKING INTO A CITY GARDEN - - - - - - - - - - - - 38
Photographs supplied by Clarence Fowler, A. S. L. A., and Mattie Edwards Hewitt

THE NEW CRAFT OF MAKING PLANTS TO ORDER—II. INCREASED CROPS THROUGH USE OF HYBRID SEED *J. L. Collins* 40
Photographs and plan supplied by the author

WALKS AND TALKS AT BREEZE HILL, IV. *J. Horace McFarland* 42
Photographs by J. Horace McFarland Co., George G. McLean, Arthur G. Eldredge

AMONG OUR GARDEN NEIGHBORS - - - - - - - - - - 45

LEONARD BARRON, Editor

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Some Splendid Liliums for Autumn Planting

The amateur gardener who prides herself or himself on their garden appreciates the value of planning ahead. Among the many bulbous plants for planting in the Autumn for Spring and Summer flowering is the Lily. Lilium Candidum or Madonna Lily blooms most seasons early in June with the Larkspurs, and the later blooming Lilies such as Auratum, Speciosum Magnificum and Speciosum Album, do best if planted in the fall of the year. Lilium Candidum are grown for us in France and arrive in this country about September first and should be planted by Oct. 15th. Lilium Auratum and the two varieties of Speciosums are grown in Japan. They are later maturing and usually arrive in this country about December first. It is advisable to cover the beds or borders with leaves or litter to keep out the frost so that they may be planted when they arrive.

LILIUM CANDIDUM
(Madonna Lilies)

The favorite Lilies of the old-fashioned garden; produce strong, stiff stems, studded with a mass of pure, glistening white flowers. They are splendid for the flower border and bloom during early June.

	Doz.	*100*
Mammoth Bulbs	**$2.50**	**$20.00**
Jumbo Bulbs	**3.50**	**25.00**

LILIUM AURATUM
(Golden Banded Lily)

The flowers of this favorite Japanese Lily are very large and are pure white in color thickly studded with crimson spots, while through the centre of each petal runs a clear golden band. They are excellent for planting among Rhododendrons or other herbaceous plants in the hardy border where the lower portions of the plant are shaded from the hot sun. They bloom during July and August.

	Doz.	*100*
Mammoth Bulbs	**$3.50**	**$25.00**
Jumbo Bulbs	**4.50**	**35.00**

LILIUM SPECIOSUM MAGNIFICUM
(Oriental Orchids)

The flowers of this splendid type of Japanese Lily are perhaps best described as frosted white, spotted and bordered with deep pinkish crimson. They do well in most soils and are splendid for border planting. They bloom during July and August.

	Doz.	*100*
Mammoth Bulbs	**$3.50**	**$25.00**
Jumbo Bulbs	**4.50**	**35.00**

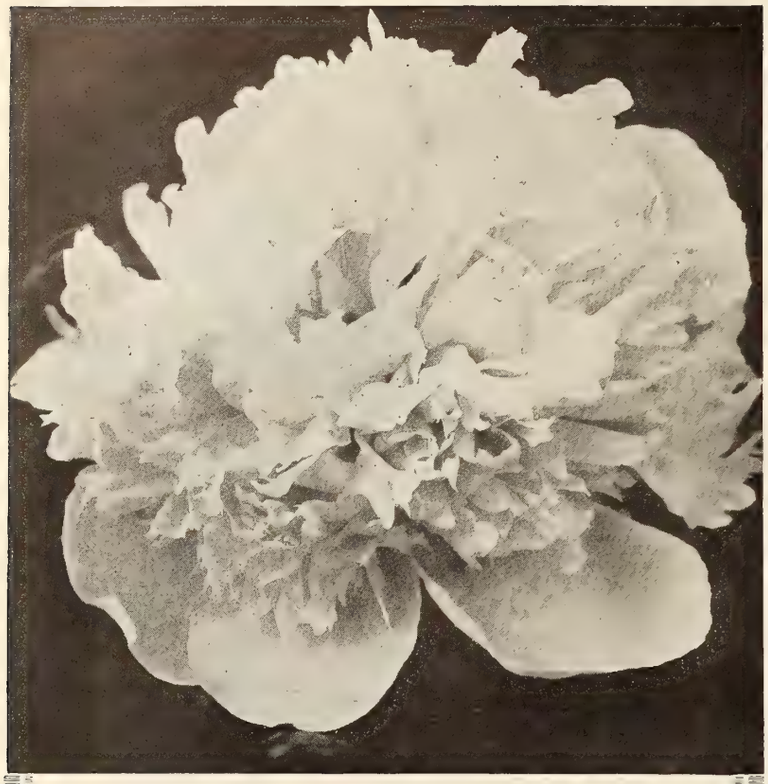
LILIUM SPECIOSUM ALBUM

This is the pure white form of Speciosum and is excellent for planting in the hardy borders. They bloom during July and August.

	Doz.	*100*
Mammoth Bulbs	**$3.50**	**$25.00**
Jumbo Bulbs	**4.50**	**35.00**

We would suggest that *Garden Magazine* readers place their orders for these Bulbs now. Our Autumn Catalogue—*"High Quality Bulbs for Autumn Planting"*—has just been received from the printers. If you are not on our mailing list, we will be pleased to send you a copy

30 and 32 Barclay St. Stumpp & Walter Co **New York City**



"The Welcome Guest"

Some people we entertain once and let it go at that. Others we welcome at every turn and never get tired of their good company.

As with people, so I find that there are certain plants of whose companionship I never tire. And being strictly human, I believe that every other true-at-heart gardener feels the same way as I do. I believe among such guests in your garden as will ever be welcome will be "Welcome Guest," one of the famous

HOLLIS Peonies—
The Premier Product of a Pioneer

Created by the great love of a man for this magnificent hardy plant, the Hollis Peonies are the result of the painstaking efforts of one of the pioneer hybridizers in the Peony world. I acquired the Hollis collection about seven years ago and have now worked up a stock of the best Hollis seedlings that enables me to offer a few.

A Special Collection of Six Superb Sorts Postpaid for $10

Attraction (Hollis) One of the very finest of the Japanese type, termed "Wonderful Glowing Suns." Guards are clear tyrian-rose, center same color as guards, tipped gold. Pleasant fragrance. $2.00 each.

Welcome Guest (Hollis) An exqusite blending of silvery rose-pink and white. Large very fragrant flowers. $5.00 each.

George Washington (Hollis) One of the brightest deep red Peonies grown; large semi-double flowers. Stamens intermingled with petals. $2.00 each.

La Coquette (Light pink guards with white center.) A favorite everywhere. $1.00 each.

Mons. Jules Elie (Crousse) Chrysanthemum-like flowers of pale lilac rose. One of the largest and finest. $1.00 each.

L. W. Atwood (Hollis) Cream white center, guards white, occasional crimson fleck. $3.00 each.

Special Offer: I will supply one strong root of each of above six superb roots (a regular $14.00 value) for $10.00 postpaid.

"The Dahlia King"

Please Get My Fall Guide

Besides Peonies, Iris and a few other hardy plants, it offers a good collection of Tulips, Narcissi, Hyacinths and other bulbs for Fall planting. You will find the quality of the plant material I offer for Fall work in the garden to be just as high as the quality of my Dahlias, which have won me the loyal friendship and business patronage of thousands of Garden Magazine readers. Please write for my Fall Guide to-day and mention Garden Magazine.

J. K. ALEXANDER

World's Largest Dahlia Grower

27-29 Central St., East Bridgewater, Mass.

Those Happy Sempervivums

Few forms of plant life make as fascinating a study as the quaint and curious Sempervivums or Houseleek, about which Miss Rathbone gave such an interesting account in June Garden Magazine. Satisfied with practically no care, thriving luxuriously among the rocks on poor soil, they deserve the attention of every garden enthusiast interested in the curious among plants. A good season's growth has enabled us to amply multiply our stocks so that we now can offer you

Five Kinds You'll Learn to Love!

They are shown below, growing in the rock garden of one of our customers. This plantation shows what one season's growth will do with practically no care or attention.

S. Alberetti. A little gray fellow, growing in clumps of uniformly small rosettes, one inch in diameter.

S. globiferum. The always popular "Hens and Chickens." Yellow and purplish tinged flowers.

S. Pittorii. A brown-tipped rosette forming large clusters of loosely jointed rosettes. Very rapid grower.

S. tectorum. The well-known "Bullock's Eye" or Old Man and Woman. See to left in center of illustration. The largest in this collection.

S. Arachnoideum. The rare cobweb or spider-web form of houseleek. Flowers red. 25c each, $2.00 for 10.

Prices: Any of above, except where noted otherwise, at ***20c each, $1.50*** for ***10.***

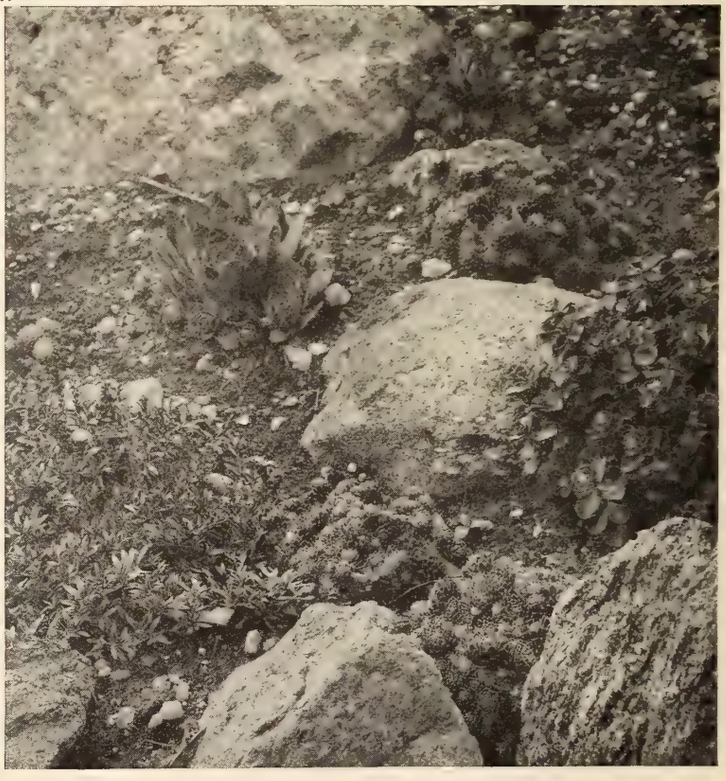
SPECIAL OFFER: **We will furnish four each of these five distinct and most interesting varieties, 20 vigorous plants in all for $2.50 postpaid.**

Palisades Perennial Service

consists in putting at your disposal one of the most complete collections of hardy Perennials in the East. Whether you plan to have an old-fashioned hardy garden, a rock garden or you wish to fill in your shrubbery border, please afford us a chance to serve you.

Catalogue free on request.

PALISADES NURSERIES, Inc., Sparkill, N. Y.



Totty's Fall Guide
to
Gardens of Perennial Joy

is the title of our new Fall Catalogue. For eighteen years we have served America's most exacting home gardeners with high class Plant Specialties for the ornamental garden. Since the last few years have seen greatly increased interest in Fall planting of Dutch Bulbs, we have decided to serve our customers with these as well. Let gardens made of Tulips, Daffodils, Hyacinths and Lilies add to your Spring Garden joys.

Breeder Tulips

Here are eight unusual Breeders that will become the pride of any garden.

Apricot—A rich mixture of salmon, rose and brown. 85c. per doz.; $6.00 per 100.

Cardinal Manning—A soft red, flushed with rosy bronze. Base is tinged yellow. 75c. per doz.; $5.00 per 100.

Don Pedro—Dark red, inside rich mahogany with yellowish base. $1.75 per doz.; $12.00 per 100.

Fairy—Reddish-brown, shaded apricot. $2.00 per doz.; $15.00 per 100.

Grand Maitre—Magnificent purple violet. 85c. per doz.; $5. 50 per 100.

Lucifer—Dark orange, with rosy shades; interior scarlet-orange with yellow base. $2.00 per doz.; $15.00 per 100.

Queen Alexandra—Soft sulphur-yellow, flushed with purple. 75c. per doz.; $5.00 per 100.

Yellow Perfection—Light bronze yellow, edged golden yellow 85c. per doz.; $6.00 per 100.

Special Offer:

We will supply one dozen of each of above 8 magnificent Breeders, 8 dozen bulbs in all, for $8.50. One half above quantity for $4.50. All postpaid.

Many Other Attractive Offers in Free Catalogue

Besides being a messenger on behalf of the best in Bulbs you will find our Fall Guide to abound with suggestions about the making of hardy gardens in general.

Your request for a copy will be appreciated if you are not a Totty customer already

Charles H. Totty Co.
Madison **New Jersey**

Early Summer Garden's Crowning Glory

THE chaste, white, fragrant Annunciation or Madonna Lily will add a touch of dignity to any garden. Planted singly or in groups, among the shrubbery or in the perennial border, its influence and effect predominates. Restful to the eye and of pleasing fragrance, stately and impressive throughout its blooming period, we suggest the planting of more Madonna Lilies.

To be successful in growing them, watch these two important details:

Plant bulbs NOW, for they must make a certain amount of growth this fall if the flowers are to be perfect next July.

Plant only bulbs coming from northern France, which guarantees their being hardy and free from disease.

We Offer Only the Best Product of the Most Careful Growers Who Manage the Cleanest Fields in France

Our strain has never failed to give the utmost satisfaction. Order promptly, please. Stock short. Immediate delivery.

Packed in original French hampers, 100 extra heavy bulbs $30—50 at $17.

Large clumps of Delphinium and true Belladonna to plant with these. $10 per dozen clumps.

John Scheepers, Inc., *Flower Bulb Specialists*
522 Fifth Avenue **New York City**

"When June's Glory Melts into July"

Wouldn't You Be Proud of This Lovely Bridal Wreath?

The captivating beauty of Spirea Van Houttei needs no extolling. And yet, it has many rivals, *not* "just as good," but even more charming in their own way and season. Think of the stately Mock oranges (Philadelphus), the brilliant Weigelias, Pearl Bush, Deutzia and a score of others. Besides being beautiful, they serve well as hedges and windbreaks, while their endurance under all climatic conditions stands unquestioned.

For Beauty and Service Plant these Flowering Shrubs

Buddleia Veitsche — The improved Butterfly Shrub.

Deutzia—Pride of Rochester. A large double Rose form.

Exochorda—or Pearl Bush. Most showy in early May.

Forsythia—or Golden Bell. The golden feature of the April garden.

Hydrangea—paniculata grandiflora. Makes August bright with white.

Philadelphus—or Mockorange. The fragrant specimen shrub for lawn and borders.

Spirea—Van Houttei, as shown above.

Syringa — or Lilac, in many named new varieties.

Viburnum—or Snowball of over a dozen forms.

Weigelia—Eva Rathke, the most showy crimson shrub in its season.

Any of these and hundreds of others are available for present planting at the uniform rate of 50c each, $5.50 per dozen.

Special Offer. We will send one strong shrub of each of above ten popular kinds (varieties our selection except as specified), for $4.50. Please mention Garden Magazine when ordering, and be sure to avail yourself of our special

FREE SERVICE OF UNUSUAL CHARACTER

We realize that besides plants, many Homegardeners desire honest advice on planting questions. What to plant for specific needs and purposes, besides when and how, will gladly be suggested by our Service Department, in personal charge of experts. While our catalogue (for which please ask), contains much useful information along these lines, it will also raise many additional questions. The undersigned will gladly and personally help with advice and suggestions on any garden plans.

800 Acres

AMERICAN NURSERIES

H.E.HOLDEN, Manager

SINGER BUILDING, NEW YORK

"Successful for over a century"

Beautify Your Garden with BURPEE'S BULBS

Hyacinths	*Tulips*
Narcissus	*Crocus*
Peonies	*Iris*

and many other spring-blooming bulbs including all the best varieties in a complete range of colors are fully described in our Fall Bulb Catalog.

Burpee's Bulb Catalog will be mailed to you free.

Write for your copy to-day.

W. Atlee Burpee Co.

Seed Growers **Philadelphia**

Every Flower Lover Should Have Our Free Illustrated Fall Booklet

Because—Our offering of Peonies, Irises and Phloxes is unexcelled in variety and reasonable in prices.

Because—It offers real help in the selection of the best varieties and their culture.

Because—Our ***new*** phlox, Mrs. E. J. Norman, is a "hummer" and worth double its introduction price of 50c.

Because—Our Prize Offer for the five best criticisms for the improvement of our booklet is worthy of your attention.

Those who have seen it say:

"I want to express my appreciation of the clearness and convenience of your catalogue."
—From Pennsylvania.

"Of the many catalogues in hand, highly colored and otherwise, I have just looked over your book, and was amazed at its simplicity."—From New York.

S. G. Harris, Box A, Tarrytown, N. Y.

CHERRY HILL DISPLAY OF RARE AND BEAUTIFUL PEONIES OCCUPYING AN ENTIRE HALL AT THE AMERICAN PEONY SOCIETY'S ANNUAL EXHIBIT, BOSTON, JUNE 18-19, 1921.

In the Last Analysis the Verdict of the Judges is what Counts:

1893 Appleton Silver Medal, Collection of Peonies, Boston, Mass.

1897 Kelway Bronze Medal, Collection of Peonies, Boston, Mass.

1899 Kelway Bronze Medal, Collection of Peonies, Boston, Mass.

1903 Kelway Silver Medal, Collection of Peonies, Boston, Mass.

1909 M. H. Society Silver Medal, Collection of Peonies, Boston, Mass.

1914 M. H. Society Gold Medal, Popularizing Peonies, Boston, Mass.

1915 A. P. Society Gold Medal, Best Collection of Peonies, Boston, Mass.

1915 M. H. Society Silver Medal, Seedling Cherry Hill, Boston, Mass.

1915 Pan-American Silver Medal, Peonies, San Francisco.

1916 N. B. H. Society Silver Medal, Collection of Peonies, New Bedford, Mass.

1917 M. H. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1917 A. P. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1918 A. P. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1918 N. B. H. Society Silver Cup, Collection of Peonies, New Bedford, Mass.

1918 M. H. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1919 M. H. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1919 M. H. Society Silver Medal, Collection of Peonies, Boston, Mass.

1919 A. P. Society Gold Medal, Best Collection of Peonies, Detroit, Mich.

1920 A. P. Society Silver Medal, Best Collection of Peonies, Boston, Mass.

1920 M. H. Society Silver Medal, Display of Peonies, Boston, Mass.

1920 Appleton Gold Medal, Collection of Peonies, Boston, Mass.

1920 North Shore Horticultural Society's Silver Medal for best collection of Peonies.

1921 M. H. Society Silver Medal for artistic display of Peonies, Boston, Mass.

1921 A. P. Society Gold Medal for best collection of 100 Peonies, Boston, Mass.

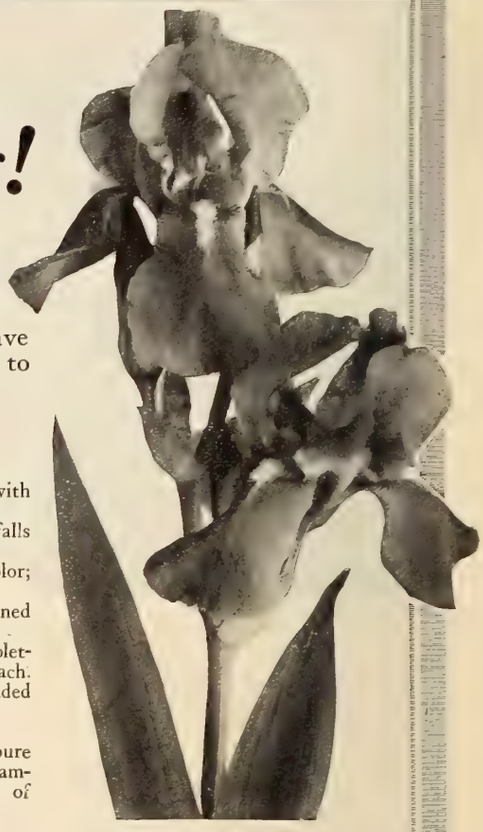
In purchasing from us YOU GET THE QUALITY THAT HAS MADE THE ABOVE AWARDS POSSIBLE.

Our CATALOGUE, which is free for the asking, DESCRIBES nearly four hundred of the choicest and rarest Peonies to be found anywhere.

T. C. THURLOW'S SONS, Inc. (*Cherry Hill Nurseries*) West Newbury, Mass.

Resolve to Have an IRIS Garden Next Spring!

Because of the many wonderful colors found among the Iris, that flower, so the story goes, was named after the Goddess of the Rainbow. But the Goddess would surely be envious these days were she to see the modern wonder of the hybridizers' art, known to us as the German Iris. Scintillating, glittering, velvety creations of the most alluring tints and shades, an Iris garden brings new wonders each recurring Spring. For years, we have championed the cause of the "Flags" or Iris Germanica and we are now in a position to offer you a fine collection.



An Iris Garden constitutes an Ever Increasing Joy

Sorts Bound to Add to Your Garden's Beauty

Agnes—Standards white, blotched and frilled lilac; falls edged violet.
Aurea—A pure, rich, deep yellow, extra-large flower, distinct and beautiful. $.30 each; $3.00 per doz.
Canary Bird—Standards and falls pale yellow; $.25 each.
Dalmatica—Delicate lavender. Tall, vigorous plant, with very large flower; one of the finest of all Irises, $.35 each; $3.50 per doz.
Darius—Yellow and lilac; large flowers.
Donna Maria—White, tinged lilac.
Florentina Alba—Silvery white; early.
Gagus—Standards yellow; falls reticulated white and crimson
Honorable—Yellow; falls brownish maroon.
King of Iris—New. A striking novelty, with flowers of perfect form, the standards clear lemon-yellow; falls deep satiny brown, with a broad border of golden yellow; $.50 each.
La Tendre—Standards white, tinted lavender; falls light purple.
Lohengrin—New. Foliage and flowers of gigantic size, of a deep violet-mauve; $.50 each.
Loreley—New. Perfect shaped flowers, falls of a deep ultra marine blue, more or less veined with creamy white and bordered sulphur-yellow, making a beautiful contrast; $.50 each.
Lygin—Standards pearl-white; falls pale blue.
Madame Chereau—Pearly-white, daintily edged with lavender.
Maori King—Standards bright golden yellow; falls velvety maroon, margined yellow.
Midnight—Rich deep purple. The finest of its color; $.35 each.
Mrs. Reuthe—Standards white, shaded and veined blue; falls frilled, delicate blue.
Nibelungen—New. Standards fawn-yellow; falls violet-blue, with fawn margin; distinct and pretty; $.50 each.
Pallida. Large, light blue standards; falls shaded darker; beautiful; $.25 each.
Pearl—Standards clouded white; falls pale lavender.
Princess Victoria Louise—New. Standards pure sulphur-yellow; falls rich plum-color, with cream-colored edges. A new and distinct combination of colors; $.50 each.
Queen of May—Lovely rose-lilac; $.25 each.
Queen of the Gypsies—Standards bronze; falls light purple.
Rhein Nixe—Standards pure white; falls deep violet-blue, with white margins; will attain a height of 3 feet, with many-branched stems. $.50 each.
Viscount de Brabant—Standards light purple; falls dark purple, upper half reticulated white.

Named varieties, 20 cts. each, $1.75 per doz., $10.00 per 100, unless otherwise noted.
Mixed varieties, $1.00 per doz., $6.00 per 100.

Special Offer of German Iris. When selections of varieties are left entirely to us, we supply named German Iris in good assortment at $1.25 per doz., $8.00 per 100, $60.00 per 1,000

May We Mail You Complete Catalogue of Other Items for FALL Planting?

September brings us face to face with the actual season for planting such things as Peonies, Phlox, Iris and many other hardy perennials, besides Tulips, Daffodils, and other imported bulbs. Please write for your copy at once since it will help you to greater Spring gardens in 1922.

Elliott Nursery Co.
322 Magee Building
Pittsburgh, Pennsylvania

The Garden MAGAZINE

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Nathan R. Graves Co. Photo.

"ALL SUMMER LONG THE HAPPY EVE
OF THIS FAIR SPOT HER FLOWERS MAY BIND"
Wordsworth

Forethought is quite as effective in the garden as elsewhere and bloom like this, continuous and abundant, is the rich reward. Autumn offers prolonged opportunity to plan and plant for next season's effects. Garden of Miss Chanler, Tuxedo, N. Y.

Mattie Edwards Hewitt, Photo.

"FLOWERS THAT MOVED LIKE WINDS ALIGHT"
Francis Ledwidge

Such a situation of partial shade is just what the Japanese Anemone (A. japonica) loves best; here it finds requisite shelter and moisture, and a charming background for its lightly hung flowers. Gallantly continuing to bloom from September to late frost—when most of our garden friends have begun to tuck themselves up snugly for the winter—its rare hardihood should win it a place in any border planted for fall effect. At "The Reef," Newport, R. I., residence of Mrs. E. B. Andrews

© *Chester J. Hunt*

"THE NEVER-QUIET JOY OF DANCING DAFFODILS"
John Masefield

The very epitome of earth's gladsome re-awakening Daffodils hold a unique place in the affections of the gardener—spring without them would seem no spring at all! They are never lovelier than when so rioting afield at will

The Month's Reminder

SEPTEMBER—THE MONTH TO GET READY FOR NEXT YEAR

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practise. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

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DURING late summer make plans for next spring's garden; and indeed during September a greal deal may be done that will show results next spring. It is the ideal month for making and planting the herbaceous border, particularly; for repairing lawns; for starting the winter work indoors.

Flowering Things to Plant Now

Peonies, Iris, Phlox, in particular; and in general most herbaceous plants are best shifted or planted at this time.

Peonies to be planted as soon as the roots can be secured shortening to six or seven inches any long tap-roots. Strong divisions do not make as good a showing the first year after planting as do two- or three-year old roots but they are ultimately superior. Good varieties are now available at a nominal cost; there is no excuse for purchasing poor things just because they are cheap.

Iris offer a widely different range of colors and even a greater variety of type and season of flowering than Peonies. Many new and beautiful varieties are now offered. Get the best of such things.

Daffodils, and other bulbs that had perforce to be lifted early, to be planted before the new purchases arrive.

Prepare plans for actual planting in October and November of shrubs, trees, fruit trees; and for any changes in existing groups etc.

Plants That Are Blooming

Hybrid-tea Roses are now producing plenty of bloom, with color richer than that of June. Unless the beds have been well fed during the last two months give now manure water or some other form of quick-acting plant food.

Tall flowers such as Dahlias, Cosmos, etc. to be kept staked, and the flowers cut freely as they develop.

Anemones will be greatly benefited by liquid manure or other concentrated fertilizer when the buds show.

Guarding Against Early Frost

Get ready to protect such plants as Cosmos, Dahlias, etc., from early frosts. Ofttimes after a single killing frost, fine weather continues well into October.

Protection may be given by muslin screens, windbreaks, smudge fires; or by allowing the irrigation system to run over the plants overnight, etc. A little ingenuity will accomplish much.

Remove all dead leaves and plants at sight; don't get careless because the period of early frost approaches.

Hedges etc. to be clipped for the last time, and any not attended to previously to be clipped at once. Late growth from late clipping makes the whole plant tender and more susceptible to winter cold.

Storage places for such plants as Hydrangeas, Bay-trees, Oleanders, etc. to be got ready.

Lawns Old and New

Lawns needing renovation to be topdressed with some good approved fertilizer thoroughly raked with an iron rake and seed sown; bearing in mind that the more the existing grass appears to be ruined, short of actually tearing it out of the ground, the better will be the results. The surface must be loose in order that the roots of the young grass seed may penetrate. After seeding roll lightly in both directions.

An over-rolled or hide bound lawn can often be cured by taking a digging fork and thrusting it into the turf six or eight inches, and depressing it so that the turf is lifted and loosened, allowing the treated area to remain in this condition for a few weeks then treat or roll down. Such lifting is best done during a wet period.

Still time to sow new lawns with every assurance of success if the work is done early.

Current Work for Next Year's Needs

Fallen leaves to be collected and composted, as when rotted they make the finest fertilizer. Start by preparing a nook where they can be stored without being whipped all over the place by the wind.

Take cuttings of all bedding plants as soon as possible. This will not mar the appearance of the beds by leaving holes or bad spots if the cuttings be taken at intervals. Geranium, Coleus, Heliotrope, Alyssum, Ageratum, Verbena, etc., are all best raised from cuttings.

Ready to Mulch?

More mulching must be done in the average garden if ever we are to come through properly into spring. All trees and shrubberies are benefited by it. While it is too soon to apply any now, yet this is the time to get the manure or other material on hand. Especially mulch any plants set out at any time during this year.

Vegetables Yet to be Sown Outdoors

Lettuce is the big possibility of September. Sow any of the heading types; e. g. Big Boston, May King. In localities liable to early frost have grass, straw, etc., on hand for use as protective material.

Globe Artichoke may be sown early in the month to winter in a cold-frame. (See last month's Reminder).

Growing Crops to Tend

Peas may be sown in many sections, using *early* kinds—The term "early" applies to time required to mature.

Look for cabbage worm on the late crop. This is about the last of the insects for the season. Spray small plants with poison; when the plants are large hand-picking is essential.

Celery to be fed occasionally to promote rapid growth which means quality—use liquid manure with a little nitrate of soda once in a while. Early Celery to be blanched.

Leeks to be given the final hilling; for large size feed freely.

Rhubarb appearing crowded with a tendency to seed freely needs resetting. Late this month dig up the old plants, cut into four pieces with a spade and reset, working some fertilizer into the ground at the same time.

Tomatoes to be kept tied up and fruits picked as they keep better off the vines.

Parsley roots to be transferred from the garden to the greenhouse or frame; give rich soil, and strip off the foliage when transplanting.

Winter crops (i. e. crops intended for winter use) to be kept well cultivated. September is usually a good growing month.

Taking up the Potatoes

Potatoes to be dug and stored if a suitable place is available; otherwise better leave them in the ground as long as the weather is not too wet. When digging do not leave the tubers exposed to the sun and air all day, but only long enough to dry them thoroughly. After storing pick over at intervals and remove any rotted tubers.

Sow a Cover Crop

After harvesting the crop of potatoes sow Rye on the plot, immediately. This advice applies equally to any other part of the garden from which the crops have been removed.

Don't let the orchard lie bare all winter, but sow Rye, two bushels to the acre, mixed with Vetch.

Cover crops are beneficial not only to the ground when turned under in the spring, but they keep down weeds, prevent erosion, and make the garden clean and attractive looking during the fall and winter. *Make it a rule* not to let the winter find any part of the garden without a cover crop.

Ordering the Fruit Garden

Now is the time to study what is needed in the way of fruit to be planted this fall. With the exception of stone fruits (and these are better planned for now, and ordered, in readiness for spring planting), all kinds of fruits are best planted in the fall.

Transplant fruit trees or bushes as soon as circumstances permit; it is not necessary to wait until all the leaves are off. If the roots are badly mutilated, reduce the head proportionally, cutting away whatever wood is not likely to mature. See that the earth is packed thoroughly about the roots. Blackberry and Raspberry old canes not cut out last month to be attended to at once. Strawberries planted out last month to have runners taken off to throw the energy into a single crown for next season's fruiting.

Frames to Help the Earnest Gardener

If you have no frames now is the time to get some. They can be put to excellent use during the next two or three months.

Old sash to have broken glass replaced and other repairs made.

Lettuce, of the heading type, sown outdoors anytime up to the middle of the month, and transplanted to the frames when large enough to handle, will furnish a supply of salad until Thanksgiving.

Radishes to be grown between the plants while they are small.

Pansies, Myosotis, English Daisies, etc., sown last month and big enough to handle to be transplanted into the frames for wintering.

Hydrangeas and Christmas Peppers to be lifted from outdoors, potted, and placed in a coldframe and shaded until re-established.

Anemone japonica to be propagated from root cuttings and overwintered in a coldframe.

Early planted cold storage Lilies to be carried along in a cool house. Formosum Lilies to be planted for Easter flowering. Set them in frames with excelsior or other covering. Avoid too rich soil, and have good drainage.

Greenhouse for Winter Cheer

Eternal vigilance is the price of success with greenhouse crops at this time. Watch Carnations for green fly and thrips; Roses for green fly, red spider and mildew. Sow some trailing plant alongside the benches of the Carnation and Roses. Sweet Alyssum and Candytuft will do among the Carnations, and Nasturtiums are very good in the rose house. Sweet-peas can be grown along the purlin supports of the carnation house; be sure to get a winter-flowering strain—there's a reason!

Bulbs for winter forcing to be potted or boxed up as soon as they arrive, for the sooner they are planted the sooner will they begin to make a mass of roots so essential to successful forcing. Prepare a rich friable soil and see that the receptacles have ample drainage; after planting water thoroughly. If the bulbs can then be placed in a trench or cellar, and covered with a foot or more of coal ashes or soil, so much the better.

Stock, Nicotiana, Schizanthus, Annual Larkspur, Gypsophila, etc., to be sown at intervals to keep up a supply of flowers. Mignonette is not a "cropper" so one sowing will suffice.

Cutting of choice Pentstemons to be rooted now and wintered over in a cool house.

Make preparations for planting indoors field grown Violets; Pansies and Mignonette are good companion plants.

Chorizemas and Ericas to be kept in the coolest house possible.

Annual Lupines to be sown for flowering in March, April. Another batch of Sweet-peas to be sown.

Late flowering Cosmos to be transplanted from outdoors to some position under glass. Chrysanthemums grown to single stem for large flowers to have side shoots and extra buds scrupulously removed. Support the stem as required, and feed freely.

Take available cuttings of Geraniums and put them in the propagating bench to remain for the next few weeks.

Pot-up sufficient stock plants of Heliotrope, Ageratum, Fuchsia, Coleus, Salvia, Abutilon, etc., to provide cuttings later.

Snapdragons may still be planted for winter flowering.

Primulas and Cinerarias to be repotted as required. Cyclamen should now be in their flowering pots.

Summer flowering bulbs, such as Achimines, Gloxinias, Gesneras, Tuberous Begonias, etc., as they pass out of flower to have the water gradually witheld until they have time to ripen up. Place in some dry corner of a cool house, where they will be free from drip.

Spanish Iris for forcing to be planted in flats five inches deep, covering the bulbs with two inches of soil. Keep outdoors, but be prepared to protect from drenching rains during November. The first planted ones may be put in a cool greenhouse in December, where the night temperature never exceeds 45-48 degrees— any higher temperature is ruinous. The first batch will bloom the middle of March; succession batches taking less time. A flat 24 x 12 inches will hold 60 to 70 bulbs.

Gardenias to be ventilated with care as the days get shorter, and the nights cooler. A *little* heat is necessary during the night. The plants will have made many roots by this time and a top-dressing of one part well-rotted cow manure, and two parts new loam applied half an inch thick and repeated at intervals will help. Maintain a night temperature of 68-70 degrees (and keep the atmosphere moist.)

Make out the list of shrubs needed for forcing during winter and spring. Mark any in your own gardens for lifting and potting next month; place orders promptly for others.

Sowing Vegetables Inside for Winter Use

Tomatoes for forcing to be sown at once. Red Currant, Red Cherry, and Yellow Cherry are useful for salads, and are very effective for garnishing.

Cucumbers to be sown at once. They make excellent companion plants for Tomatoes in the warm end of the house. Box-in the pipes under the Cucumbers to provide bottom heat.

Carrots, Radish, and Parsley to be sown as early in the month as possible; Beans the latter part of the month and successions every three weeks; Beets toward the end of the month.

Repotting Fruit Trees for Forcing

Pot-fruit trees now outdoors will be ripening their wood during September. Remove any suckers from the base; keep free from insects; water copiously; the sun will do the rest.

Do the annual repotting at the end of the month—no need to wait until the leaves have all fallen provided they have had good care and growth has "ripened-off." Turfy loam three parts, wood ashes one part, and a six-inch potful of bonemeal to each bushel of soil, well mixed together makes a very good compost.

Fruit Under Glass

Strawberries for winter forcing to be taken up and potted into six-inch pots; use heavy loam; pot firmly.

Melons being "finished" under glass often show a tendency to crack as the fruit begins to ripen. This is attributed to an excess of sap just at a time when nothing above normal is required. If detected in time, cutting out a V-shaped portion of the stem of the lateral carrying the fruit will be advantageous. Keep the house a trifle cooler, and the roots somewhat drier; but do not dry out.

To Grow Mushrooms in the Cellar

New Mushroom beds to be spawned when the temperature has receded to 85 degrees. Do not cover the bed for a few days until the temperature has fallen several degrees more; then case it over with virgin loam an inch and a half thick. The crop will be ready to pick in six weeks, under favorable conditions.

It will be advisable to dampen the surface of the beds together with the walls, etc., if the cellar be not naturally damp. Keep the temperature at 60 degrees at all times. Continue to prepare new beds.

FOR THE CALIFORNIAN GARDEN

September and October. In the first month prune back Roses and water and cultivate them to encourage autumn flowers. Sow Sweet-peas for early bloom. Plant Freesias and Watsonias in September, all other spring-flowering bulbs in October. This is a good time to make new lawns. October is about the best month to put in cuttings of Carnations, Geraniums, Pelargoniums, and Pentstemons, and hardwood Rose cuttings.

MY GALLANT GARDEN OF EARLIEST SPRING

LUCY ELLIOT KEELER

Fruitful Results to be Had from Present Planting of Bulbs and Herbaceous Plants with Early Flowering Shrubs

IN MY sixty-five-year old garden many experiments have been made. Here, too, half a century earlier Johnny Appleseed planted the apple trees, treasured remnants of which still remain. Some of the family have gone in for rarities and some for popularities, some for specialties and some for whimsicalities—but all for love. By successive steps the present keeper has settled down to such plants as have proved they like both climate and soil, and has ceased struggling to grow Azaleas and Rhododendrons that hate limestone and other plants that dislike clay. Also I have learned that the most welcome flowers are those "which come before the robin dares." The ecstasy with which I gaze upon the first Aconites and Violets in my northern garden far exceeds the thrill given me by cutting bushels of Roses, tubs of Lilies, and handsful of Freesias in warmer lands. Furthermore, I have discovered that by careful selection and location I can have an abundance of outdoor bloom while neighboring gardens are still deep and cold in their winter mulch.

Those who would share the joys of a super-spring garden must prepare for it early this fall. Choose the immediate vicinity of the house, so that you may gaze upon your treasures from inside the windows and from steps and porches, without setting foot on cold and muddy ground. The south side of the house must be chosen, sheltered angles and the sunny side of an evergreen or thick deciduous shrub, and especially under windows the glass of which will attract and reflect the sunlight. Soil being usually sour and barren near foundations must be renewed with liberal supplies of wood ashes, and bonemeal the special food of bulbous plants.

THE DAZZLING WHITENESS OF THE ROCK-CRESS

Whether Arabis albida, which is somewhat the better, or A. alpina be used there will be sheets of glistening white flowers to lighten up the earliest days of spring, followed by a low carpet of gray green all summer. There are double forms of both species

THE earliest flowers with me are the Winter Aconite (Eranthis hyemalis), preceding Snowdrops and the Christmas-rose by several days. Each buttercup-like flower, rising three or four inches from the soil, is surrounded by a green frill, and as the plants increase from self-sown seed great patches can soon be obtained. Associated with Aconites are Snowdrops, taller growing to peer down into the yellow cups, and colonies of Crocus. The old yellow, with mahogony wraps (C. aureus), heads the procession, followed in a few days by whites, lavenders, and purples. Named varieties are much finer than the mixed bulbs, and should be planted in separate groups, in thick central masses with outlying smaller groups, as though spreading naturally. Among the lavender and white Crocuses I have patches of the wee pink English Daisy, kept pink by frequent selection; while the white Daisies carpet the purple and yellow Crocuses and the Aconites. Often January sees Daisies and Aconites in bloom, snuggling up close to a south wall, while snow-banks lie a few feet away around the corners east and west.

In a place by themselves, a two-foot bit of sloping ground

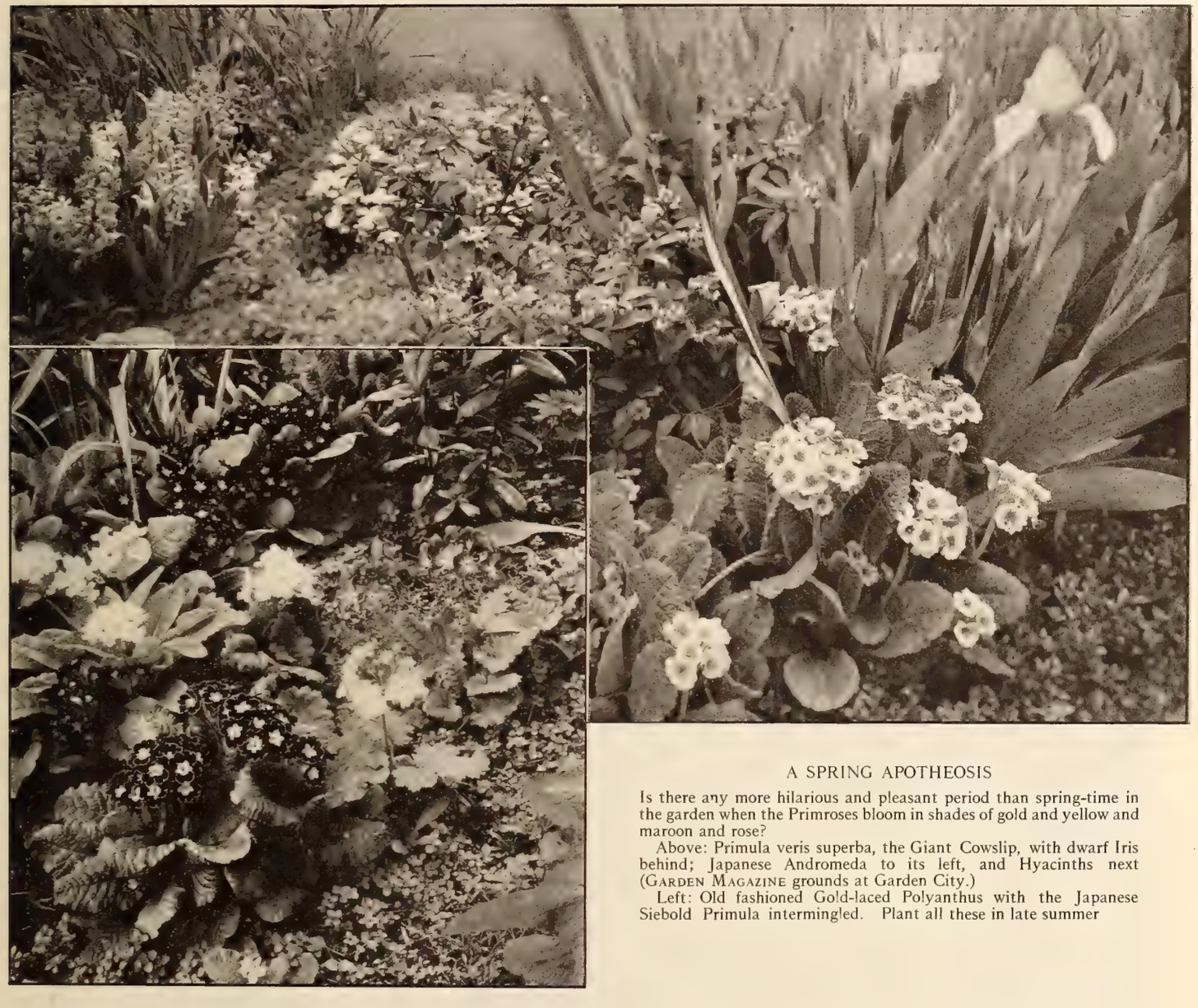
CARPETING THE WOODS WITH BLUE

The English Bluebell or Wood Hyacinth makes a wondrous sheet of blue in the spring time. Its native setting here seen suggests its planting under deciduous shrubs

formed by porch and steps, grows the little Iris reticulata, which blooms with the Crocuses and is annually greeted by my friends with astonishment verging on incredulity. This bulbous Iris, reddish purple with gold markings, grows about six inches high and is deliciously fragrant. It rises up through the tiny white Sweet Violet (V. blanda), with flower stems only an inch or two

long. The fragrance from these companions reaches far, and is often the first reminder to look for the flowers.

On the outer and colder side of Iris reticulata, and blooming a fortnight later, is a nest of Iris pumila, very dwarf and fast spreading. The type, a rich violet purple, comes first, followed by the cream, sky-blue, and yellow sorts. This plant, unlike its bulbous brother, has crowding surface rhizomes which will not tolerate a plant carpet; also broad permanent leaves, while the rush-like, four-sided foliage of reticulata soon disappears for the summer.



A SPRING APOTHEOSIS

Is there any more hilarious and pleasant period than spring-time in the garden when the Primroses bloom in shades of gold and yellow and maroon and rose?

Above: Primula veris superba, the Giant Cowslip, with dwarf Iris behind; Japanese Andromeda to its left, and Hyacinths next (GARDEN MAGAZINE grounds at Garden City.)

Left: Old fashioned Gold-laced Polyanthus with the Japanese Siebold Primula intermingled. Plant all these in late summer

CONSTANTLY trying to usurp the entire bed, and sprawling below the Iris, is Phlox subulata Nelsoni, white with lilac eye. It is cut back severely after blooming, but by spring its matted, awl-shaped foliage sits cosily on the edge of the stone step. Some yards from the Iris, for the colors jar, Scilla sibirica rises through trailing mats of single Rock-cress (Arabis alpina). If you know anything bluer than this Squill or snowier than the Cress carpet, tell me. Trailing off beyond is the Scilla's striped cousin, Puschkinia, reminding me of little girls in blue gingham frocks; also the bewitching gray blue Glory-of-the-Snow (Chionodoxa Luciliæ) and the larger grandiflora. For color harmonics I am ever hoping that a blue jay may sometimes choose the Chionodoxa walk. He would stop to admire the spotted lungwort (Pulmonaria saccharata maculata), with ornamental leaves rivalling hot-house treasures, and spikes of pinkish blue flowers mimicking the sunrise sky. Beside it glows Adonis amurensis, lovely in flower and cut-leaf. Other Scillas there are, scattered about in groups in front of the Hyacinths, all of which follow hard upon Scilla campanulata and nutans, one the English Wood-hyacinth and the other the English Bluebell, though both have pink and white forms as well as blue. Both thrive in my garden, though I seldom see them elsewhere.

In an outer border, but still only a few yards from the big south windows, are large patches of double Rock-cress (Arabis alpina flore-pleno), bearing long creamy spikes a fortnight later than the single type; mingling with minarets of Grape-hyacinth, variety Heavenly Blue. On their outskirts are the no less exquisite white form known as Pearls of Spain, which show best rising from the dark spring earth.

WHILE these early treasures appear first on the warm south sides of the Cot, groups of them continue right around it, those on the north opening as those on the south fade. The east side has its own speciality, however, an ancient Christmas-rose (Helleborus niger) in the sheltered angle of a bay. So early are its mandrake-like flowers that I keep a big glass jar to cover

them when snow is imminent. The old plant does not increase, but it survives, and furnishes a few blooms each year. Before it has lost its whiteness, an army of Bloodroot springs up, handsome in leaf and flower; while along the stone edge Megasea cordifolia is throwing up tall stalks of pink, from large leathery leaves handsome every day throughout the year. On the east, too, starts the primrose path, Primula veris superba hugging the stone edges of the house border, the pointed young leaves rising erectly through the waning snow, and by April furnishing forth foot-high stems of fragrant blooms, each a bouquet in itself. This primrose path surrounds the house, the gold and honey-colored flowers on the east opening first, followed by the maroon Gold-laced Polyanthus on the south, to the whites and creams on the west and north. This planting provides a seven or eight weeks' succession.

While the eastern Primroses are at their prime a line of mauve and lavender unfolds behind them, the native Phlox divaricata, brought in from the woods. The primrose path on the west is similarly backed by native Christmas Ferns, refreshingly green all winter, and bronze-leaved Hepaticas cuddling many tinted beauties. On the cold north border the irrepressible Myrtle (Vinca minor) starred with its periwinkle blue, links the foundation walls with the shrubbery.

RETURN to the south side, in spring the best side, and see the Hyacinths, which almost overnight follow Crocus and Snowdrops, blooming lustily before their fellows of the open beds have more than poked green shoots through the leaf mulch. Every one of these Hyacinths first served as pot plants in the house. Aubretia violacea and purpurea (avoid its magenta forms in this connection) serve as a carpet to keep mud stains from the Hyacinths, besides furnishing its own mass of color. It needs some flat stones to run over, while clipping after bloom keeps it in bounds.

In front of these are big patches of hardy Candytuft (Iberis sempervirens), green all winter, but in March and April each shoot tufted with softer green ending in flat bunches of blue-white bloom. They last for weeks, and in the little bays of their edges are the earliest Daffodils, yellow bunched Jonquilla and Campernelle, Barri conspicuus, as handsome as early. The bare spot to the left is In Memoriam, where a superb Bleeding-heart long reigned, but which some vandal dug up and carried away in the height of its adult beauty. Much as I miss it from the super-spring garden I cannot bear to replace it with the inevitably poorer specimen.

BY THIS time, however, Daffodils are lighting up every bed and border in the garden, the spring succession is on, and the tale of the superspring garden is properly brought to a close. I must not ignore, however, three shrubs allowed in this confined area, a Forsythia intermedia, kept small by replacement each third year; a Spirea Thunbergii, dainty in leaf and bloom; and Lonicera fragrantissima, whose exquisite clustered flowers remind me somehow of the Arbutus, blooming at the same time, but alas far distant from the borders where in my zeal and ignorance I once tried to make it happy.

EDITOR'S NOTE: This article is abundant in suggestion for the present planting of a border for earliest spring color. Some of the effective bulbs needed cannot now be brought into the country, on account of "Quarantine 37," and it suggests the husbanding of such supplies as do exist; for instance Siberian Squill may be raised from seed very easily if the crop is planted as soon as gathered; indeed it self sows, but the seedlings are cut down by cultivation and the perpetual "clean-up."

THE WREATHING SHRUBBERY IN SPRING

Spireas, Golden-bells, and the fruit trees do then share in painting the spring picture, when all nature seems dancing with joy. But do not forget to plant other things for summer succession

Clarence Fowler, Landscape Architect *M. E. Hewitt, Photo.*

GARDEN OF MRS. FREDERICK A. SNOW AT SOUTHAMPTON, L. I.

From May to November there is constant bloom in this delightful border. A foundation planting of perennials, supplemented with bulbs and annuals all contribute to the happy result

MAKING THE MOST OF THE HERBACEOUS BORDER

ITS DESIGN AND CARE

CLARENCE FOWLER, A. S. L. A.

EVEN to the most experienced grower a garden is always both a joy and a disappointment, but the lure of achievement leads on, and on, for every season brings new pleasures as well as new troubles. The owner of one of the most beautiful gardens I have ever seen once remarked to me that every garden has its "critical moment." This is quite true, especially of the herbaceous border, unless it has been most carefully planned and given the most intelligent care from the time it is planted until the beds are covered for the winter.

For the best growth of the plants themselves the ideal arrangement is to plan a border with a section for each season, where the plants may have plenty of room to develop and come to maturity. But of course this is really a cutting garden, and should be placed in an inconspicuous position on the grounds and treated (like the vegetable garden) as a utilitarian part of the estate although at some seasons it may be extremely attractive—it may even be arranged for color harmony. Such a planting is also an excellent place for trying out new varieties, always a fascinating pastime for the person who really loves plants and wishes to make a collection of varieties of some favorite species.

THE ornamental border, with a riot of color from the first flowers of May to the frost of October, is a very different thing from the cutting border, and can be a thing of beauty or an unsightly mess, depending on the care and skill of the person who plans and superintends it. I have yet to meet a gardener who can care for a border of this sort without supervision; its arrangement is contrary to all the laws of good gardening as he understands them. In a gardener's border plants are grown for the perfection of the individual flowers rather than for their color mass, which is so essential in the ornamental border. Thus we have two different ideals, both good enough in their own way, but not compatible. The ornamentalist is painting a picture with the ground for a canvas and the plants as pigments, and must not only have a feeling for color and form, but must know the habits of plants, how they can be grown under unnatural conditions; and what species will thrive in close association.

Clarence Fowler, Landscape Architect

GARDEN OF MRS. NEWBOLD EDGAR, SOUTHAMPTON, L. I.

Full of cool tints—blue, mauve, pink, and white—the color scheme of this garden is well chosen for the summer seaside season. Perennials for July and August bloom monopolize the right hand bed; opposite flourish Zinnias, Sweet Alyssum, Ageratum, and Ivy

The Proper Emplacement

POSITION of the garden in relation to the house and to the rest of the grounds is a first consideration. It should be an extension of the house out-of-doors, or a place where one can go to enjoy the flowers. A garden house and pool and other architectural ornaments may often become part of the composition; if the space is extensive the pool may be large enough to reflect its surroundings and also be used for Waterlilies and other aquatic plants.

There should be an enclosing hedge or wall, with a background of trees and shrubs, as an enframement for the flowers. Sunshine, which is so essential for plants, must be taken into consideration when the boundary is planned. Each garden presents a separate problem in design and use of planting material; but above everything else it should harmonize with its surroundings. The lines must, from necessity, be quite formal, to carry out the lines of the architecture. But the planting, if properly selected and treated, will soften the straight lines and give the appearance of informality.

FORM of the beds and the arrangement of walks and open spaces must have consideration before the selection of plants. The material for the walks depends to a great extent on the surroundings. Grass is the least desirable on account of its upkeep. If the low growing flowers fall over on the sides, a bare spot will surely be left or the lawn mower will cut them off the plants and make them unsightly; and the constant walking through the centres is apt to wear down the turf before the end of the season. Although attractive to the eye, a grass walk is to be avoided unless one is prepared to give it as much care as the flowers in the beds. A stone of neutral tone is usually

more harmonious with the flowers than brick. Gravel is sometimes extremely pleasing, but not so easy to keep clean as the stone or brick.

The width of the walks depends on their relation to the rest of the design. A uniform width for all the walls is monotonous. In some of the modern English gardens a pattern in the pavement is used at the intersection of walls or about a pool, which is not noticeable in the general design, but adds interest on closer inspection.

THERE is never a house too simple nor a plot too small to have a well-planned garden. A garden that is not beautiful has no reason for being. But this beauty depends on these things: the plan, the choice of ornament, and the arrangement of proper planting material. Some knowledge (or at least appreciation) of architecture is necessary in adapting the plan to the house and choosing the ornaments, and more than a mere knowledge of horticulture is necessary in selecting the plants. The planner must have a feeling for form and color and realize how the composition will look five, ten, or twenty years from the time that the stock is planted, particularly as to surrounding trees and shrubs—the herbaceous plants are less enduring and constantly changing. It is a much more difficult problem to select suitable trees and shrubs for a small place than for larger grounds. The greatest danger lies in using small or rather young trees in place of shrubs to obtain the so-called "immediate effect" and small (i.e. young) evergreen trees for foundation planting to satisfy the desire for color in winter.

In planning the boundaries it is well to divide the trees and shrubs into major and minor groups. In the former belong such trees as the Maple, Elm, and Pine which should be given at least forty feet space for their best development; between these can be spaced those of the second group including flowering Dogwood, Thorn, Red-bud and the like. Interspersed with these can be grouped the larger shrubs like Lilac, Mock Orange, and Forsythia. To bring this group down to the ground, the shrubs of the second class, including Snowberry, Dwarf Deutzia, and Japanese Barberry can be used.

Planting for Continuous Bloom

FOR continuous bloom in the beds, the foundation of the planting is of hardy perennials supplemented by bulbs and annuals. For May and early June the late flowering Tulips, Peonies, German Iris are to be relied upon; the effect is most charming with the tender green of the plants that bloom in midsummer. For late summer flower Gladiolus, etc., may be introduced in due season. (*See illustration below.*)

If the walks are other than grass, low growing plants, such as Moss-pink (Phlox subulata) can be planted in the foreground. The varieties lilacina and alba are much better than the old fashioned rose-pink of the type. Phlox divaricata in front of Hardy Candytuft (Iberis sempervirens) is a pleasing combination for spring bloom. For a low creeping plant where blue is desired Veronica repens is especially fine, and the foliage is also good throughout the season. Ajuga reptans is suitable for positions near the walks; its blue flowers are attractive in spring and the foliage takes on beautiful shades of bronze-red in the autumn. Nepeta Mussini with its soft sage green foliage and spikes of lavender flowers is another one of my favorites for this purpose. Near it I like to set Coral-bells (Heuchera sanguinea) their flowers last well into the summer and the low growing foliage is quite attractive at all seasons. Heading the list for bold foliage effects in the foreground is Saxifraga cordifolia, with deep green leaves and spikes of rosy lilac blossoms in May. For bold blue-green or glaucous foliage I like to use the old Day-lily (Funkia, or according to modern nomenclature Hosta Sieboldiana).

Plants with gray or blue-green foliage help to soften any vio-

E. L. Mix, Photo.

SUMMER GARDEN OF MR. SAMUEL HEILNER AT SPRING LAKE, N. J.

Here greensward and background feature importantly; the turf flows among the flowers like a stream broken by brilliant little islands; trees and high enclosing hedge lend shelter and an enchanting hint of mystery

lent color contrasts that are so apt to occur even in the most carefully planned garden. In this way for the middle foreground the Sea-hollies (Eryngium) in variety are most useful, and for the backgrounds where tall growing plants are desired, nothing can be better than Globe Thistle (Echinops humilis or Ritro) with their great blue thistle-like flowers and metallic blue-gray foliage. If the terminal bud be pinched out when the plant is not more than a foot high, it will force branching and a more pleasing form than if left to its own happy way of sending up a single stem. With it I like to use Hollyhocks and, in front of both, tall growing Dahlias which fill the hole in the bed when the former have to be cut. For a Dahlia of medium height none has been better than Countess of Lonsdale; its profuse salmon pink flowers have a soft blue bloom over the petals that seem to reflect the blue Delphinium when planted between it and Selma Phlox, which I consider one of the best of the tall salmon varieties. Of all the herbaceous plants that blossom in midsummer none can surpass the varieties of Phlox paniculata, or decussata, for profusion of flower, although some of the colors may be crude—that, however, is a matter of personal preferences. For a tall white, Queen is one of the best; with soft lavender-pink Gladiolus America between it and light purple Summer-lilac (Buddleia) with flesh colored Zinnias and a foreground of lavender-blue Ageratum and Nepeta Mussini, the combination is most pleasing.

Gladiolus are indeed most useful summer flowering bulbs for the ornamental border. If they are planted as soon as the frost is out of the ground and then every two weeks until the middle of July there will be a succession of bloom until late fall. The range of color is so great that varieties may be chosen to harmonize with any color scheme. For best effects plant them in groups of five to seven to fill the hole left by cutting back Larkspur or Sea-holly. It may be necessary to tie them to slender green stakes to keep them from falling over when in bloom, although deep planting will help to hold them up.

STAKING and tieing is almost an art, if the natural form of the plants is to be maintained. Some of the loose-growing species, like Baby's-breath (Gypsophila paniculata), can be trained over wire forms and an annual vine planted at the side to cover when it becomes brown. A little tieing and cutting back is necessary almost every day to keep the plants from being blown down in high winds, and from going to seed. Varieties of Phlox paniculata will continue to bloom until frost if the flowers are cut as soon as they begin to fade. The later bloom is not as strong as the first but helps to add a gay note to the composition. Many of the annuals can be treated in the same way; I have been especially successful with annual Scabiosa, one of the most useful plants for filling in vacant spaces left by early blooming perennials that cannot be prevailed upon to flower a second time.

As the season draws to a close and the cool days of autumn come upon us, the flowers take on richer tones. Boltonias, Asters, and Heleniums become the dominant notes, as were the Phloxes in midsummer and the Peonies and Irises earlier. If they have been pinched back and made to branch they are extremely pleasing; otherwise they become long and leggy, and the gardener, in a panic of fear lest they blow down, ties them to a single stake, making an unsightly mass with a few terminal flowers. All three of these plants are rank growers and are apt to crowd their neighbors; a group will double in size in a season, and so must be thinned each year. However, they are well worth while for color and should be planted in large quantities for masses of late bloom. With them such Lilies as Henry's and Tiger are good combinations for summer flowers, and if used with plants having gray-green foliage, white Phlox, some buff and orange colored Zinnias and a few spikes of Gladiolus, the effect is extremely pleasing and makes a mass of color from early July until frost.

Color combinations such as have been touched on in this article are inexhaustible. When a book is written for America equal to Miss Jekyll's books on color arrangement in the English garden, which are classics of horticultural writing, it will be a boon to all garden makers, both professional and amateur. "Color in My Garden" by Mrs. Wilder, is its nearest approach and is the result of hard work and years of experience. "The Garden Month by Month" by Miss Sedgwick and Mr. Cameron is another most useful book for the garden library. Too many books of mediocre value have been written on the subject and are accountable for many of the failures of amateurs. The best material is in fact to be found scattered in various magazine articles.

Marian C. Coffin, Landscape Architect

GARDEN OF MR. AND MRS. FREDERICK FRELINGHUYSEN, ELBERON, N. J.

THE FASCINATING ART OF FORCING FREESIAS

E. L. D. SEYMOUR

A Perfectly Practical House Plant for Winter Flowers. Alluring Variety of Colors to be Had in this Charming "Cape Bulb" Now Being Supplied from a New Industry Developed on the Pacific Coast

I LIKE to think of Freesias as flowers with a dual personality. I don't mean by that a Jekyll-and-Hyde combination of good and evil, or a Janus-like, doublefaced hypocrisy, but rather the ability to interest and appeal with equal force to both expert gardener and novice.

SUNSHINE

With wide-expanding, light yellow flower; typical of the newer hybrid strain of Freesia

That the Freesia has interested, not to say confused, the systematic botanist is clearly indicated by the history of its nomenclature. It has been known at various times as Gladiolus refractus, Tritonia refracta, Freesia odorata (which was ultimately retained as a varietal cognomen) and Freesia refracta by which title it is now accepted in the best horticultural circles. Similarly there have been segregated and individually labeled at various times F. Armstrongii, F. aurea, and F. Leichtinii, although it is now generally accepted that these are but variously colored forms of F. refracta, the type, which hailed from southern Africa early in the 19th Century. At any rate, from the many possible combinations of these four forms come the varied hybrids that are winning such deserved present popularity.

It is because of the rich opportunities offered in this hybridizing field, because of the ease with which new varieties —subjects for selective breeding—can be produced from seed, and because of certain engaging difficulties encountered in the seemingly simple task of developing and retaining a pure white sort, that the Freesia appeals to the advanced gardener. It is because of the ease with which the bulbs can be forced and brought into bloom in the house, and the unique attractiveness of the variously tinted flowers, that it can be equally appreciated and enjoyed by the veriest tyro.

While the cut-flower buying public, through the medium of the florist, has come to be best acquainted with the solid white form—which, in spite of its name sometimes shows an irresistible tendency to hark back to an atavistic shading of yellow—there are available for house culture a host of more recently improved varieties in a bewildering range of clear yellows, oranges, pinks, mauves, blues, and reds. Even a tendency in the last three shades to "throw back" to a striped or "broken" appearance, although an unmitigated fault in the eye of the expert variety producer, simply adds interest and excitement for the amateur. Leaving the creation of new forms and the improvement of old ones to the advanced plantsmen, there remains for us now the simple but fascinating game of forcing Freesias at home.

There is the disadvantage that the Freesia is not included among the bulbs that may be imported in quantity under the regulations of Quarantine 37; a short time before that edict went into effect, the great bulk of the commercial supply came from Europe—about ten per cent. of it from Holland and the rest from France. But large-scale production in California has been found quite practical and thence are coming, in increasing numbers, high class bulbs that will enable us to keep this dainty flower with us.

Toward the end of summer the Freesia forcer's season begins with the delivery of the bulbs. Since there is only a moderately plentiful supply of American bulbs on hand at any time, the gardener must place his order as early as possible. As to quality and the variety and richness of the colors offered, each year seems to bring noticeable improvement. For the person who finds greatest delight in mixtures, obviously nothing else will do; however, it will be generally conceded that there is a better chance of maximum satisfaction and interest in growing a selection of the named varieties that recent years have brought into being. Of the pure whites, Purity and the newer Fischeri are probably supreme; Katherine Watkins, noteworthy for its splendid salmon yellow even if its flowers range a trifle smaller than those of other sorts, is becoming a standard; California, a strikingly clear yellow; and Tremont, of a strong bronze-yellow shade, are both novelties worthy of investigation; and there remain others ranging through the more bizarre colorings.

A word of suggestion here, as to what constitutes a "good" bulb. Freesia corms in any case are smaller than the more familiar Tulips, Narcissus, and Crocus; but even more than in the case of those plants is it true that in general "the heavier the bulb, the stronger and finer the flower." In other words, the experienced Freesia grower is likely to give first choice to the small, solid, kernel-like corms instead of the large, fat ones (especially if the latter show any sign of softness).

When the bulbs arrive, it is best to plant them promptly. Freesias are regular hogs for room. A general rule is six bulbs to a five-inch pot, twelve to a ten-inch pot, and correspondingly open spacing if a flat or bulb pan is used. Probably a good share of the Freesia failures have been the result of over crowding.

A characteristic of the Freesia is the almost human tendency of an occasional bulb to "go on strike." Though planted with all care, and given the best of attention it may, nevertheless, refuse to grow the first season. Let alone, however, it will start into vigorous action the following fall. Such behavior is at times annoying, but this chance of a few delayed blooms in a lot of bulbs is one of the prices of Freesia growing.

GIVEN the bulbs planted about their own depth in a pot in an average good soil, the next requirement is a cool, moist, dim place where they can develop roots. Perhaps the least bothersome way to provide this is to plunge the pots in the botton of a trench say a foot deep dug in some out of the way corner. Be sure there is good drainage, so that the soil in the pots cannot possibly become water soaked, then fill in the trench with straw, leaves or other coarse litter. Here the bulbs can safely and advantageously remain until late fall or even early winter when the ground begins to freeze; the mulch will protect the Freesias and the longer they are given to develop a husky system of feeding roots, the better. This means from approximately six weeks as a minimum to two months or more if conditions permit. The deeper they are plunged, the cooler, more uniform and more satisfactory the rooting conditions.

About six weeks before flowers are desired, bring the pots indoors to a temperature of from 50° to 60° F. Moderate heat, increased very gradually, if at all, is best, failure often resulting from an attempt to force the bulbs into flower suddenly and rapidly. When the buds actually appear, a temperature up to 65° to 70° (if the rise has been gradual) may be employed to open the blossoms.

With bulbs purchased in August, this program provides for the first flowers about Christmas; the bulbs brought indoors at regular, say weekly, intervals (the last of them remaining outdoors, well covered, until hard freezing weather) should keep up a supply of blooms throughout the winter and even up into early spring.

When finally it is time to bring them indoors, accustom them to the warmth gradually; start the forcing process slowly and cautiously. Hasty forcing is probably another common cause of weak, disappointing blooms even if not of actual failure. Combined with it may often be injudicious watering. A pot holds only a limited amount of soil which, in turn, contains only a limited amount of plant food. It is surprisingly easy, by means of too frequent, over zealous watering to wash a good deal of the most soluble plant food either out of the pot entirely, or at least down into the lower layers of soil where the roots have the greatest amount of trouble to secure it. Aim merely to keep the soil from drying out—and if it is possible to plunge the pots during the forcing period, in loose, absorbent soil, moss or fibre which, being watered as needed, will convey sufficient moisture to the pots and the soil therein with no possible chance for leaching, why, so much the better.

It is claimed, that if unduly hastened into bloom the colored Freesias open with an increasingly pale color, according to the degree of injudicious forcing.

WITH the passing of the Freesia's glory in midwinter—or in March, let us say, if the forcing has been commendably moderate—arises that ubiquitous question, "Shall I save the bulbs for another year?" If you want to do it experimentally with rather less than an even chance of success, go to it. Dry off the bulbs after the foliage has ripened; store them away in an airy, dry place, and hope for the best the next year. Being tender, they are of no use as garden material as are Tulips, Hyacinths, and most other bulbs that have bloomed indoors.

FRAGRANCE AND GRACEFULNESS

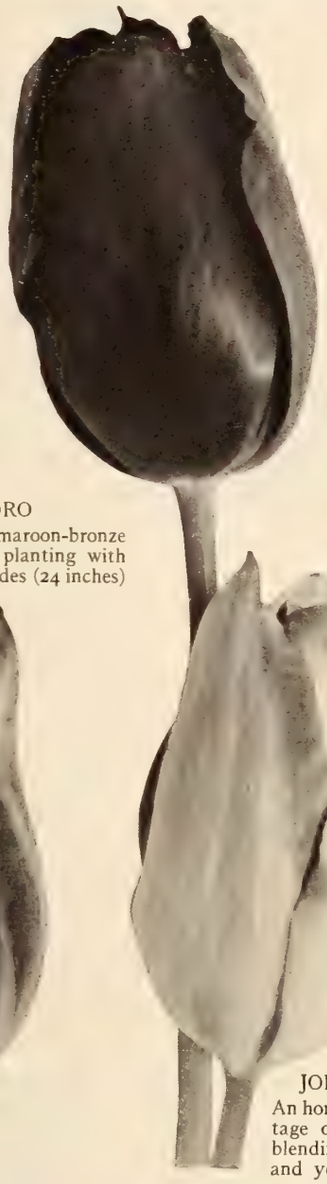
Bunch of cut Freesia blooms with own foliage. Originally pale yellow, Freesias now come in shades of yellow, lavender, and rose. They are easily grown and do not need the "dark treatment" of the "Dutch" bulbs

TALKING ABOUT TULIP FAVORITES

Approved Varieties for Present Needs

DERRILL W. HART

SOMEHOW I had a prejudice against Tulips during the first years of my experience as an "amateur" gardener. Just why it would be impossible to say, but I resisted for several years; and then, one spring I fell heir to a spell of sickness. A kind neighbor brought me a pot of bright red Tulips, and of course they had an unfair advantage over a sick man. Still I wasn't quite ready to give in. I planted the bulbs in my garden rather through a sense of economy than the desire to have Tulips, and promptly forgot all about them. Bright and early the next spring they showed up—every last one of them. I was so thrilled that my prejudice was overcome and I determined to have a "collection" of Tulips. I got the fall bulb catalogues as soon as the dealers could send them out—and my first order contained ten varieties of twenty bulbs each. I waited impatiently for the first warm days of spring but, alas! only about a dozen bulbs came out of the ground. Well, I certainly gave that bulb dealer the dickens—but it was fortunate that I examined my Tulip bed before I sent him the letter I wrote. I found that a thriving family of mice had taken an apartment in a mole dug-out and Madam Mouse had prescribed Tulips twice each day as a means of solving the winter menu.

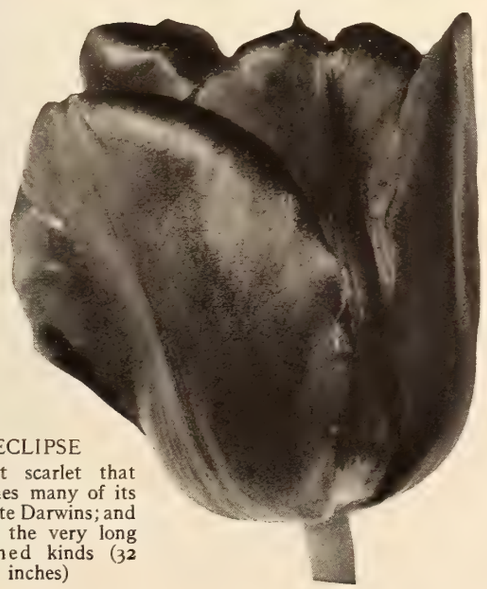


DON PEDRO
A popular brown-maroon-bronze Breeder, suitable for planting with yellow and orange shades (24 inches)

PRINCE OF ORANGE
Perhaps the nearest approach to a real orange in Breeder Tulips. Effective with light purples (24 inches)

JOHN RUSKIN
An honored favorite Cottage of long standing, blending salmon, old rose and yellow (16 inches)

MATCHLESS
A violet-rose Darwin that enhances the tones of yellow in the Breeders. (Note, there is no yellow color in any Darwin variety)



ECLIPSE
Bright scarlet that outshines many of its associate Darwins; and one of the very long stemmed kinds (32 inches)

CITY OF HAARLEM
Glowing in scarlet, and making 30 inch stems easily, it is one of the most showy of the Darwins. Has a white base

But I didn't give up and, after several years, I have come to look on Tulips as a necessity and the following varieties have become the pets of my Tulip collection:

John Ruskin (Cottage). You must know John. I give him the place of honor on my list because I like him best. He is a charming combination of salmon-pink, old rose, and soft yellow. The bulb dealers tell me that John is a most profitable fellow to grow. He holds his well-shaped flowers on a graceful stem. He isn't very tall but he's very handsome. This is one John who always speaks for himself.

Venus (Darwin). This lovely Tulip I call the "Goddess of My Tulip Garden." I always plant her next to John Ruskin and they make a wonderful show. John nearly always gets out a little earlier, however. There is a Jupiter, too, in my garden, but he isn't in a class with Venus. Venus is a clear lavendar without any of the dullness that usually comes with this color. To my mind, she is decidedly the most beautiful lavendar Tulip. The lilac shades to a glowing centre of silver and her good size gives her a queenly appearance. She is equally good for forcing or bedding. Do you know her? Yes? No? Well, well, she will win you with her first blossom!

Picotee or Maiden's Blush (Cottage). This is the daintiest flower in my Tulip garden, but what a flirt she is! She was growing alongside of John Ruskin, but I had an idea she was falling in love with John. I knew Venus was jealous so I moved her over next to Louis XIV. The little flirt looked even more beautiful against Louis' regal colors and when the Tulips bloomed this spring there was a spicy scandal in my Tulip garden because Louis XIV and the Prince of Orange both fell for her.

Eclipse (Darwin). Eclipse is the tallest Tulip in my garden. He is a brilliant scarlet with perfect flowers of large size. He fairly burns his way into your fancy, he's so bright and so stately. You may have difficulty in finding him, but he can be secured in large quantities if you place your order early enough.

Clara Butt (The favorite pink Darwin). This grand Tulip has been like a gold mine to Tulip growers and bulb dealers. Named for the famous English contralto, herself a relative of a fashionable London West End florist, she has probably eclipsed the fame of that lady, for she is known wherever Tulips are grown. She is the only real rose-pink Darwin. Her stately flowers and soft rich color have won her the title of "Most popular Darwin." There's no way to keep her out of my honor roll.

Prince of Orange (Breeder). Having told you about the goddess in my garden, I now begin on the royal family. The Prince of Orange is the nearest thing to a real orange that has been in my garden. He's unique. With his bright color and manly size he has become a favorite. If you order any Breeders be sure to include this member of the royal family. Next to some light purple, he makes a dazzling show.

Louis XIV (Breeder). He is surely a king among Tulips—with a color combination all his own. His rich purple robes overlaid with bronze and edged with golden brown make him a thing of beauty. Then inside the flower you will find a vivid yellow base. Louis XIV grows very tall and presents a distinguished bearing. You'll have no trouble in securing him.

Mrs. James Robertson (Cottage). This lovely lady is, to my mind, superior to Mrs. Moon. Mrs. Robertson is a glowing rich yellow with long, graceful stems and perfect flowers. She can be used in any combination and is my favorite yellow Tulip. You may have difficulty in finding Mrs. Robertson. Keep your eye out for her—she is a beauty!

La Tulipe Noir (Darwin). A rich maroon-black that is almost as popular as Clara Butt. When I read Dumas's "La Tulipe Noir," I determined to see the Black Tulip. This fellow has large blossoms with long stems. This is another money-maker for the bulb growers. He is a great fellow to lend contrast to your color scheme.

City of Haarlem (Darwin). This fellow is a brilliant scarlet. If there is any brilliance needed, he can supply full measure. Inside, there's a white centre of intense purity. You wouldn't suspect it when you see him at a distance. The City of Haarlem grows right ahead of anything around him and 30-32 inch stems are a certainty. A bed of this lights the entire garden.

Apricot (Breeder). This big fellow ought to be named "Jumbo." His ways are very reliable and he's become a favorite in my Tulip estimation. Give him a trial. Apricot is a soft buff, intermginled with olive-green and yellow. I always place him among the big brilliant reds and he makes a wonderful picture. He grows very tall and can be secured from any of the bulb dealers.

Inglescombe Yellow (Cottage). This is another fine yellow Tulip that should be in every garden. Is larger than Mrs. James Robertson and a shade lighter in color. Inglescombe Yellow is a grand Tulip to give color to your garden and, due to its size and long stems, combines ideally with the purple and red Darwins. A deservedly popular variety.

Matchless (Darwin). This splendid Tulip caused many exclamations from admiring friends when first seen in the garden. It is one of the largest of all Darwins. Color is a violet-rose with a narrow margin of pale violet. I placed Matchless alongside of Pride of Haarlem and Jaune d'Oeuf and the combination is superb.

Don Pedro (Breeder). The Don is a gay fellow and played havoc with the color scheme of some of the dainty combinations in my garden, but when I planted him between Apricot and the lovely Inglescombe Yellow he was in his right niche. The Don is a dark rich brown with maroon and bronze shadings. The inside of the flower is a rich red with olive colored base. The Don is a popular variety and you should have no trouble in securing him.

Bacchus (Breeder). Here is a Tulip that is almost as popular as Clara Butt or John Ruskin. Bacchus is one of the daintiest of all Tulips and is such an amiable fellow that his colors go well with any Tulip grown. He is a dark reddish violet, blue inside, with white base. He's such a large fellow that he thinks nothing of shooting up 28–30 inch stems and then hoisting a large globular flower of perfect form. Altogether, he is one of my real pets. He is not easy to secure and you will have to pay a right good price for him, but he's worth it!

The Fawn (Cottage). When the Fawn blooms I am in a quandary to know whether I should place him ahead of John Ruskin, but then a second look always makes me give John Ruskin first choice because he has more color and I am a "nut" on color. The Fawn is a dainty combination of old rose and fawn, almost shading to salmon when fully out. The flowers are perfect in shape and the stems are graceful and of good length. The Fawn is a grateful fellow to use because his soft colors will match those of any Tulip grown.

Faust (Darwin). A very dark, rich purple that is superior to La Tulipe Noir for depth of color. Faust is a stately fellow, very large and very perfect in form. His rich, satiny flowers seem as though they had been cut from the blackness of midnight, but you'll find a white base inside. This has been the most satisfactory of all the dark Tulips to give background.

Keizerskroon (Single Early). This is undoubtedly the finest Tulip among the Single Early varieties. When the long, dreary days of winter and early spring have whetted my appetite for a sight of bright colors, this is the first fellow that satisfies. Keizerskroon is a universal favorite and his color combination is a dazzling association of red with yellow edgings. Keizerskroon is as large as a Darwin, but of course his stems don't grow so high. This grand Tulip is the best bedder in the list.

WHAT a feast of colors one may enjoy in his Tulip Garden! With these varieties you may plan an indefinite number of color schemes and each year you will find a new pleasure in the changes you make. By all means plant some Tulips this fall.

THE PREACHER PRACTISING HIS PRECEPTS

William Robinson Shows in "Home Landscapes" How He Puts His Teachings into Effect in His Own Garden

LEONARD BARRON

WHEN the preacher essays to practise what he preaches, he is as likely as not to reach somewhat short of the ideals. Not so, however, in the case of William Robinson, perhaps best known among us for his "English Flower Garden," whose teachings in naturalistic gardening have set a universal standard and who in his country home is able to indulge himself in the completed elaboration of the principles that he has so forcefully promulgated during the half century.

Not so often as we should like to see it does the garden maker have the opportunity of putting into effect in a place of his own the principles that he enunciates. But then, in truth, many who style themselves "landscape architects" can hardly be called teachers of any positive principles in gardening, and to a very large degree they make gardens to order to fit limitations and clients over which they have no control and the given works of any given practitioner may perhaps not be as fully expressive of himself as he would. They must be accepted rather as the practical solution of the combination of problems which he had before him.

For half a century now William Robinson has been preaching the gospel of absolute and supreme naturalness in gardens, and he has been able in an unusual degree at Gravetye (his fine English estate in Sussex) to develop his fancies to his heart's desire. Here we have the artist painting pictures for his own delectation. Some of the results of this work Mr. Robinson has published in "Home Landscapes" (2nd edition, London, John Murray, 1920), a volume de luxe printed in large type on handmade paper with thirty-two full page plates, $9\frac{1}{2}$ x $7\frac{1}{2}$. These illustrations, splendid reproductions of photographs of high technical quality, are selected to illustrate the methods and principles by which he reclaimed the property from an unregenerate overgrown tangle and changed it into one of the most gratifying, soulful plaisances of the Southwold country. Short, explanatory, and descriptive text accompanies each plate.

This gateway gives on to the heather garden, on coming from the vegetable garden on the higher level, and frames a view of meadow beyond the residence

Supplementing the story of Gravetye is a selection of pictures of typical famous English country houses in equally naturalistic settings.

Mr. Robinson all his life has championed the purely naturalesque—even more the simply natural—as the one essential

The residence nestles on a well defined hillside with meadow and lake below, the flower garden extends to the right, with croquet lawn slightly above it

principle of garden development. He calls himself a "landscape gardener" and admires and loves the expression with no toleration whatever for the term "landscape architect," which he considers "a contradiction in terms, and one of the most stupid ever invented by man." Its creation is credited to the French who "could not connect a gardener with anything artistic and invented this compound name and rejected the English one of landscape gardener which is the right one."

"Home Landscapes" is a human document in which the author bares his very soul and with it all tells by example and precept how "English garden results" have been attained. The reader may refer to THE GARDEN MAGAZINE for June, 1920, for several views of Gravetye and he will find other photographs, made recently, of some of the more intimate parts of the garden accompanying these notes.

Mr. Robinson believes that the flower garden should be kept close to the house and that it may appropriately be treated in perfect association therewith and plants encouraged to grow naturally in simple beds "without any fantastic and unplantable knots and twirls. * * * If it seemed ridiculous in Pope's time to design a garden on the plan of a bad carpet, it is many times more so in our day in view of the flora of the northern and temperate regions of the world, wholly unknown in the days of the ancients to whom we owe our topiarian ideas." What a world of truth and inspiring suggestion there is in this after all! What a paucity of the material in our own country we actually use when there is an abundance awaiting, almost clamoring, for us to put into our gardens; whereas instead we adhere slavishly to the materials that have been given us from foreign nursery sources!

Perhaps the one universal lesson that Mr. Robinson gives is that good gardening consists in accepting the conditions of the situation, taking them as they are, making roads and paths where they wander most naturally, and planting thereabout whatever is already by nature adapted to that particular kind of situation. His credo is:

> I believe the best results can only be got by the owner who knows and loves his ground. The great evil is the stereotyped plan, the poor results of which are seen on all sides. But the man must love the work and know one tree from another, and his pictures can only come from constant thought as to the ground itself. Lessons? Yes, from Nature mainly. A few days in one of the side valleys of the Tyrol or any beautiful mountain land will tell more than many books. Also pictures of the great landscape painters like Corot, Daubigny, Constable, and R. Wilson when free of the conventions of his day, not because we want to paint as we should beat them with living pictures. But the breadth, air, forms,

THE APPROACH

Removal of the lower branches of evergreens is done consistently for Mr. Robinson holds that such trees, growing naturally in groups, do lose their lower branches. This clearing up opens the view of the distant hillside. Japanese Box is planted below; it never grows high

and values that interest painters may teach us much. The atmosphere of Corot, skies of Diaz, and water of Daubigny are ours to make such use of them as will help to give us better pictures than ever were painted. We want the spade of the forester and the eye of the artist. The lie of the ground must be studied in the way of the leader of soldiers, and the quality of the soil, as soil useless for arable may give us noble woods. Landscape views, air, and distances also must be studied, not only in the place but from it to the neighborhood. . . . There is no organized profession to help. Any one may call himself a landscape gardener; a navvy who has some experience of wall and roadmaking, a jobbing gardener, and others without any training may offer to do the work.

But how are we to know a landscape gardener? By this sign, among others—that he will study the ground thoroughly first, and bring no plan in his pocket. He will work on the ground and be able to mark on it what he seeks to carry out. Office plans are no substitutes for the thing itself, but the custom of plans on paper is so fixed that it is not easy to get this truth seen. There can be no true work in landscape save by one who knows trees by heart, and there is no royal road to that knowledge save by life study.

That success in gardening is based primarily on an intimate acquaintance with plants, Mr. Robinson insists time and again, and he may point to the English gardening spirit for justification. For nowhere else is there such a keen popular knowledge of plants as such; and nowhere else, as is acknowledged, are gardens so popular and so generally good.

By no means the least valuable chapter in the book is Mr. Robinson's forecast of the rock garden of the future. With us rock gar-

Mr. W. ROBINSON'S GARDENS AT GRAVETYE

Photographs by Leonard Barron

SCOTCH FIR WALK

"In natural forests or even in wellplanted woods the pine throws off its lower branches and shows the dignity of stem, the greatest charm"

Bordering the croquet lawn, at the base of a marked slope a retaining wall was put in to hold the soil. This suggested the wall planting shown and a "table garden" where dwarf plants grow at convenient height

THE ROSE ARBOR

Wide enough, sufficiently spaced around and about, this treatment holds a lesson for many

dening is so new that it is yet in its experimental stage. Mr. Robinson insists "that a heap of stones thrown together as a rock garden is one of the fundamental errors to be discarded before progress can be made." The best rock gardens, after all, are the natural road made ledges "asking for no design or artifice, only planting." The importance of the rock as a factor in providing suitable root conditions is emphasized, wherefore the rock would be better buried instead of being so much in evidence as it usually is. Rank, vigorous growth in our rock gardens is undesirable, a fault that is brought about largely by the conventional thought of making a rich soil since in nature these very rock plants live in gritty soil, well drained, but never in their lives get a touch of such a thing as manure. The principle of the fruit garden and the vegetable garden where the crops are cleared off annually is quite another thing from that of the rock garden. "The admiration for rotten manure and other rich soils," which is referred to as being typical of the gardener, worked detrimentally in the rock gardens of England and is already having a like effect with us. May we be warned in time! A further suggestion for the rock garden is planting with "dwarf shrublets."

Notwithstanding the fact that "Home Landscapes" is in essence an English book, and so must be read intelligently by the American gardener yet its breadth is such that it will be of real use. Mr. Robinson refers from time to time to plants of the whole temperate zone, and his lessons in application of the material are equally good on both sides of the Atlantic—because they are fundamentally sound.

To provide shelter this portico was added to the three hundred year old residence from which to view the garden (to the left.) An atmosphere of age is acquired by growing Stonecrops, etc., in the roof tiles

BOOKS CURRENT AND STANDARD

LUCY EMBURY HUBBELL

EVERY intelligent gardener is a reader of books, for the obvious reason that, if genuinely interested, he is on the alert to discover what his fellow craftsmen are thinking and doing. It is only the dull and unimaginative who fails to learn from the recorded experience of others.

Of course, nothing can take the place of first-hand knowledge, and reading is not meant as a substitute but as a supplement. Life does not hold hours enough or opportunity for any individual to test out for himself the multiple phases of horticulture; he must build upon the ventures and successes of gardeners the world over through many generations—all progress springs out of such coöperation.

Gardening literature may, to facilitate discussion, be roughly subdivided into four groups:

I. Books inspirational and suggestive rather than direct or concrete.
II. Practical handbooks of specialized interest.
III. Cyclopedias for reference.
IV. Descriptive accounts (scientifically accurate, but not necessarily technical in character.)

Generally speaking those of Groups I and III well serve the needs of Garden Clubs whose members require occasional heartening and an easy access to information of many sorts. The grower of Gladiolus, on the other hand, or the seeker after native flowers turns naturally to Group II for help; and the student (whether gardener or not) with a penchant for delving into the origin of things, their significance and fitness, finds satisfaction in books of the type of Group IV.

An up-to-date library seems an indispensable part of the equipment of any active Garden Club—which is to say of every Garden Club, for an inactive organization has really no reason for continued existence. At least one member or, better still, a committee of three could very pleasurably obligate themselves to keep in touch with current garden literature, reporting on it at club meetings from time to time with recommendations for any acquisitions deemed desirable. If not already familiar with the good standard works which form the nucleus of any useful collection of this character, the Committee on Books must obviously make a knowledge of these their first undertaking; and the more limited bookshelf demands especially careful consideration.

BECAUSE nothing in nature is ever final, garden happenings must every so often be brought up-to-date.

To have at hand in compact, get-at-able form under one cover, information so fundamental and so diversified as that found in Albert D. Taylor's "The Complete Garden" (Doubleday, Page & Co., March, 1921) is rare good fortune.

The book was built up in response to the very real and often iterated demand which Mr. Taylor met both in his field work as practising landscapist and in his class work as Professor of Landscape Architecture at Ohio State University.

The system of classification is logical, pertinent, and readily followed. Part I, General Planting Suggestions, holds answer to the ever recurring questions of how and when to sow, prune, mulch, transplant, and innumerable other queries which trouble the uninitiate, and often the seasoned gardener as well.

The major portion of the volume (Part II, Lists for Reference) is given over to plant materials for every conceivable use and in all sorts of combinations. The lover of birds, for example, finds in concise form (pages 164–167) exactly what shrubs encourage feathered visitors to come and feast, and why. Estate owners who go in for game will be glad of the listed Game Cover Plants, and the city apartment dweller may learn what lives most happily in window-box and hanging basket. "Street and Avenue Planting," "Trees and Shrubs for Seaside Planting," "Perennials for Different Purposes," "Tulip Combinations," "Plants for Florida"—these headings selected at random give some hint of the diversity of subject matter treated in this reference manual which, in scope and thoroughness, fully justifies its title. A uniquely serviceable volume, "The Complete Garden" solves the riddle for most of us and furnishes a sound backbone for any shelf of garden books.

MRS. KING has a way of dangling allurements that sets the most slothful of gardeners in his slackest midsummer mood afidget in his chair and his fingers itching for a trowel. "Pages From a Garden Note-book," a recent Scribner publication, worthily succeeds her earlier volume: "The Well-considered Garden." Every club has some lagging members who require periodic injections of enthusiasm and, for that matter, none of us can afford to miss a chance at any sort of fresh inspiration.

AMONG newer practical handbooks of specialized interest is Miss Alice O. Albertson's "Nantucket Wild Flowers," put out this spring by G. P. Putnam's Sons. Because of its comparative isolation, thirty miles at sea, the flora of Nantucket remains singularly free from the influences of outside infiltration, and is, in consequence, a somewhat unique and especially seductive subject for study. The book is very simply and clearly arranged and thoroughly illustrated with easily analyzed sketches by Miss Anne Hinchman. The derivation and significance of the technical names of the various plants is briefly suggested in a manner which fills them with meaning for the tyro too indolent to do much digging among ancient languages on his own account.

EVERY great movement has its history and horticulture is no exception. The literature of gardening, commonly dominated by the practical, has also its lyric mood. No one of sensitive insight can have continued traffic with growing things and fail to perceive their wonder and significance; the life of man and of the plant world about him are so indubitably one.

This truth has been forcibly brought home to us during recent years by a series of writings from the lucid and veracious pen of Ernest H. Wilson, Assistant Director of the Arnold Arboretum. His latest work, "The Romance of Our Trees" (Doubleday, Page & Co., 1920,) ranks supreme among garden classics and has a value and an interest quite independent of time. The various Chapters are amplified from the series of articles recently published in THE GARDEN MAGAZINE.

Scientifically accurate, but not at all technical or labored in manner, this book has strong appeal for investigating minds not content with the mere surface of things. The student of past ages, the poet, the scientist, the lover of folk lore will, each and all, find fascinating echoes ringing through the story of our trees from earliest times.

Striking testimony of the interdependence of all life is come upon in Mr. Wilson's accounts of how the Ginkgo has continued to exist through centuries in practically unchanged form because of the protective influence of Buddhism, and how the Cedar of Lebanon owes its continued being to Christian worshippers who cherished it for religious reasons. Wars and migratory movements, too, played a great part in the distribution of plants—the Pilgrim fathers contributed more than convictions to the upbuilding of this new land; we owe them thanks for the delicious New England Apple!

The beauty of trees at all seasons and their use as an integral part of every real "garden" in its wider and true sense, their economic value, their spiritual significance—these are things we are just beginning to learn and for which Mr. Wilson's book awakens vivid appreciation.

GROWING FERNS IN THE HOME

E. I. FARRINGTON

Simple Rules for the Management of the Most Decorative Group of Plants, Once so Popular, and Now Again Claiming Attention by Force of Sheer Beauty and Merit

THE POPULAR BOSTON FERN

This most generally adaptable Fern for all-round decorative use is a form of the Sword-fern (Nephrolepis exaltata). First appearing with a Boston florist about 1890 it has since given rise to a multitude of other variations in habit and frond

KEEN interest in Ferns has been aroused by the great Fern Show to be held by the Massachusetts Horticultural Society, beginning September 22, the first show of the kind ever staged in America. Ferns have been known all down through the ages, for they represent a very old primitive type of vegetation, and have been sometimes prized and sometimes feared, for the ancients believed that while certain kinds had a beneficent influence, others were always surrounded by evil spirits.

While there are many beautiful Ferns native to the Northern states, most of them are deciduous, and consequently not of value for home decoration. From other parts of the world, however, come evergreen species which are among the most ornamental of plants which can be grown indoors, whether in greenhouse or dwelling.

THE ROOSEVELT FERN

One of the more recent and popular forms of the very variable Boston Fern

Popular Fallacies about Fern Growing

THERE are several mistaken ideas about the culture required by Ferns, which accounts for many reported failures. For one thing, they do not need to be kept wet. They grow naturally in moist locations, to be sure, but are very shallow rooted, so that the roots do not stand in water. Most kinds will thrive fairly well in a north window, if they get plenty of light, but they will grow yellow and spindling in a dark corner of the room. On the other hand, they are not averse to a little sunlight, provided they are given water enough to compensate for the increased transpiration. Yet it is true that different species are somewhat notional in this matter. The Boston Fern and similar forms are the most adaptable, growing well in almost any location where there is good light, if they are not shifted too suddenly from one environment to another. Indeed, they can be grown equally well indoors or out if this one point is kept in mind. It should be borne in mind that the "cresting" of the now numerous variations of this popular Fern is inclined to disappear in heavy shade.

It is a common belief that Ferns are especially fussy about the kind of soil which encases their roots. This, again, is a mistake. Some of them, notably those of the Nephrolepis family, of which the Boston Fern is the best known, will do well in any good garden loam with a little sand added.

While the statement is often made that manure is inimical to success with Ferns, the fact remains that commercial growers often mix a liberal amount of *well rotted* barnyard dressing with the compost which they are preparing for Ferns of the Nephrolepis type. Let it be said, though—and this is important—that the manure must not be fresh. Indeed, it is best to let the compost stand for a few days after it has been mixed so that the danger of burning will be avoided.

THE best compost for Ferns of all kinds (as a general rule) consists of two parts leaf mold, one part sand, and one part loam. As is natural, considering the way in which they normally grow, all the Ferns now discussed have a special liking for leaf mold. If the gardener cannot readily get this material a very good substitute may be made by digging up a little turf and scraping off the part around the roots.

Someone has said rather aptly that the chief enemy of the Fern is the deadly jardiniere. This doesn't mean, of course, that there is anything inherently wrong in the jardinière itself; but, when it holds a potted Fern, it is likely to conceal the surplus water which gradually rises around the roots until it drowns them! No harm will be done if care be taken to prevent this occurrence, and indeed Ferns may be benefited by having the space between the pots and the jardinières filled in with sphagnum moss.

DRAPING THE GREENHOUSE WALLS

Ordinarily an objectionable eyesore the walls of this greenhouse at Wodenethe, Fishkill, N. Y., are made beautiful by Sword-ferns and others, with Palms, and over all the Creeping Fig, unique among warm greenhouse wall covers

As may be inferred from all this, good drainage is of the utmost importance when potting up Ferns. This is easy enough to provide when deep pots are used, but is somewhat difficult with the low fern-dishes often seen. With them it is wisest to have a layer of charcoal entirely covering the bottom. Beware of fern-dishes that roll outward at the top. It is seldom that they have sufficient depth to be satisfactory. Choose by preference those with perfectly straight sides, and be sure that there is a hole at the bottom for excess water to pass through.

Ferns make a dense network of roots all through the soil, to the very outside of the ball, for which reason it is important to keep the pots themselves clean. The pots should not be filled too solidly, and yet the earth should be pressed down to such an extent that the water will not simply run down the sides between the ball and the pot instead of passing through the soil. This one little point explains one reason why Ferns sometimes seem to suffer for lack of moisture, while being watered very often.

All Ferns abhor illuminating gas, and even a *very* little gas in the room will kill a well established specimen. It has become much easier to grow Ferns in living rooms since electricity has largely replaced the gas jet. The use of oil stoves and lamps does not produce a poisonous air for the plants.

It is almost impossible to have as much moisture in the average home as Ferns need for best results, which is one reason why they grow so much more luxuriantly in even a small conservatory. Still, a fairly satisfactory condition may be established by keeping the plants packed with moss or by setting them on a bench covered with ashes or pebbles rather than in a saucer. If a number of kinds are to be grown, a special bench where saucers are not required is most desirable. Still, if this arrangement is out of the question, enough moisture can usually be obtained by keeping a pan of water on the radiator or in the window.

Ferns are exceedingly sensitive and resent being brushed against, so that it is best not to set them in a hallway or any other position where they will be rubbed by members of the family and guests.

WHAT is known as the Boston Fern came into popularity some twenty years ago under the name of Nephrolepis Fosteriana, having originated with a Dorchester, Mass., florist whose name was Foster. Its peculiar merits made it an ideal house plant. Several years later a new and improved, crested form, Piersoni, came into favor; this has been followed by a rapid succession of other variations, each with peculiar merits of its own,. Among the best are Roosevelt, Whitmani, Whitmani compacta, Verona, elegantissima, Teddy Jr., Scotti, Macawi, Victoria (which is a new crested form of Teddy Jr.), Norwood, and Harrisi. In addition there is a low growing form known as the Dwarf Boston Fern. Many of these newer kinds have a tendency to gradually revert to the common Boston type, but all of them remain exceedingly beautiful, with their finely cut, feathery foliage, for several years; and after all, the natural life of a Fern is not very long. It is true that occasional specimens thrive in the living room window for seven or eight years but, as a rule, better results are obtained by frequently introducing a new plant.

WHILE the kinds mentioned are the most decorative and by far the most popular, there are others of established merit which were once great favorites. Possibly the Maidenhair Fern is not grown as widely as formerly, and yet its delightful delicacy when it is well grown appeals to everyone. The easiest form to handle is Adiantum Croweanum. This is a compact variety and the one most often used by florists in making up designs and bouquets. It will thrive well under the conditions already described, and so, for that matter, will several other Maidenhair Ferns, including curvatum and hispidulum.

It is quite different with the luxurious looking A. Farleyense. As it happens, this is one of the most popular of Maidenhair Ferns, but is exceedingly particular as to its requirements. It

THE MOST BEAUTIFUL MAIDENHAIR FERN
Tropical in habitat Adiantum Farleyense needs careful handling with an even, warm temperature

must have plenty of air and plenty of water, and yet if there is too much moisture in the air, the foliage will turn yellow. It demands an even temperature of from 70° to 75° and, as the fronds are very easily injured, needs an abundance of space. All the Adiantums prefer a north window to all other locations, and should be repotted frequently.

Of late years the Birds'-nest Ferns (known botanically as Asplenium) have come into favor. By some people they are accounted rather hard to handle, and yet no difficulty should be found in growing them if there is ample drainage in the pots. If this point is overlooked the leaves are almost sure to turn yellow. Another mistake sometimes made is allowing water to enter the crown, the result of which is to make the leaves decay at the base. Otherwise the Birds'-nest Fern will thrive in ordinary living room conditions, and is prized for its clean, glossy foliage, and because it is so different in appearance from any other member of the Fern family. No special care as to temperature need be exercised when growing this plant, as it does not mind a night temperature which goes as low as 60° or even 55°.

For a Fern which takes but little space, the Holly Fern (cyrtomium) is desirable. While this grows to considerable size, it is especially handsome when small, and for that reason is often used in making up fern-dishes. It is difficult for some people to realize that this attractive plant, with its peculiar holly-shaped leaves, is really a Fern at all. It takes practically the same culture as given for the Birds'-nest Fern.

While entirely different from the other Ferns commonly cultivated, Cibotium Schiedei and a similar form known as the Regal Fern are very ornamental, and are made distinctive by the light green color of the foliage. These plants are really Tree-ferns in the young stage and before the trunk has developed. Although they are Mexican plants they are related to the Chinese Tree-fern which was famous in olden times under the name of the Scythian Lamb. As grown indoors in their immature state, these Ferns demand an abundance of water, both at the roots and along the stem. Frequent syringing agrees with them and they like full sunlight.

NO BETTER ornament for the centre of the dining table can be found than a well composed fern-dish. Unless one is satisfied with a small Birds'-nest Fern, Holly Fern, or members of the Pteris family, it is best to let a florist make it up. The Pteris Ferns are especially valuable for this purpose when small, but must be renewed frequently. In fact, the life of the average fern-dish is necessarily short, although it ought to last longer than it ordinarily does. Housekeepers often fail to realize that these little Ferns demand quite as much light, air and moisture as any other kind. The only way to keep them growing properly is to remove them from the table between meal hours and place them on a window ledge or in some other position where they will get an abundance of light. Indeed, a few hours of sunlight every day will do them more good than harm. It is just as important to have good drainage for these little Ferns as for the larger Boston Ferns, while at the same time water must not stand in the outer dish.

People who are planning to buy Ferns to grow in the house the coming winter should make their purchases now. This is really more important than appears at first thought. It is impossible to even approximate in the ordinary living room the same winter conditions as are found in the greenhouse. Consequently the sudden and drastic change of environment may mean the early demise of the Fern itself. Moreover, it is difficult to move Ferns in very cold weather without getting them chilled. At this time of the year, on the other hand, conditions in the greenhouses do not differ greatly from those in the home, except perhaps that they have rather more moisture, and the plants can be moved from one place to the other now without suffering any setback.

A LITTLE BIT FROM THE TROPICS
Only in a suitable greenhouse may such a scene be reconstructed; Australian Tree-fern and Birds'-nest Fern are here growing in comfort

THE GOLDEN CUP THAT CHEERS IN SPRING

"Daffodils
That come before the swallow dares, and take
The winds of March with beauty"

Shakespeare

WILLIAM D. IRVIN ARNOLD

MODERN DAFFODIL TYPES

(Above) King Alfred the giant Golden Trumpet Daffodil, which at once won favor. (Below) Lord Kitchener, a newer Leedsii, white perianth with lemon primrose chalice. (Both natural size)

© *Chester J. Hunt*

IF NARCISSUS, who lost his heart, and incidentally his health, in the contemplation of his reflection in a fountain, was half so beautiful as his namesake of our modern gardens, one's disdain of his vanity is abated.

Certainly the long, graceful trumpets of some of the White Trumpet varieties of this much-improved flower recall the rounded ivory limbs of the glorious youth of mythology and his eyes could not have been more star-like than the blooms of the newer poeticus forms. And so few flowers bear appropriate names; the Narcissus are the very embodiment of youth and springtime.

After much patient effort and scant success with many perennials, and disgusted by the lack of appreciation with which Roses received my admiration and rewarded my labors in their behalf, I turned disconsolately to hardy bulbs and, lo! for a number of years each spring has held a promise which has been more than realized; and never yet a disappointment.

To those who know Daffodils by but one or two of the Yellow or Bicolor Trumpet varieties, and perhaps the old Pheasant's-eye and double Van Sion, the wonders evolved by the present-day hybridizer are a revelation. And, best of all, the blossoming of these gorgeous creations is almost as certain as the return of the vernal equinox—a fact which one likes to hug close during the winter.

The colors of Narcissus, too, are so satisfying—soft primrose yellows, shimmering silver, deep chrome yellow, citron, apricot, lemon, canary, peach, sulphur, orange, and creamy white; while for absolute whiteness the petals of one of the poeticus forms make the white of a Lily appear dingy by comparison.

When one has for years been amazed at the apparent lack of color-sense in those who write the descriptions of flowers for the average florist's catalog, it is refreshing to have blooms appear as represented; the words sulphur, canary, or apricot brook no misunderstanding, and orange is orange the world over. With the exception of orange-scarlet and the crimson line on the edge of the cups of the Poeticus family there are no reds to be dealt with—happily, for who has not shuddered at the chromatic atrocities perpetrated in the names of "rose," "crimson," "carmine," and "lilac"? Having malevolent magentas, crude cerises, and noxious, bruise-like "Tyrian-roses" unfold before my revolted eyes has made me wary of unknown reds in the garden, and the word "mauve" has become to me a synonym for suspicion.

Have we grown a bit too fanciful in our gardening? "Garden Pictures" are all very well, but to be obliged to gaze upon flowers at certain hours of the day to obtain the full effect of their coloring seems a trifle strained, and a color described as "lovely in bright sunlight," "lighting up beautifully in the late afternoon," or requiring "white spires of Lupins and grayed Phlox Stellaria" as a background for its finicky tints savors just a little of the fantastic. Narcissus ask no stage settings, no special lighting.

Some Varieties that are Favorites

MY NARCISSUS grow in and about an orchard on a hillside and each recurring April the ever-growing colonies brandish their trumpets more lustily than ever before, and my hilltop wears a diadem of gold.

Under Baldwin Apple trees grows the gardenia-like N. alba plena odorata, the double-flowered form of poeticus—fragrant, dazzling in its whiteness, and wonderfully beautiful. This is the only variety that I have found difficult to grow, but after repeated trials in various locations it flourishes amazingly in the shade provided by the trees, which grow in a rather moist situation, although it is a somewhat shy bloomer the first year after planting.

Along the edge of a wood bordering the orchard are quantities of Golden Spur, the earliest Yellow Trumpet and the first to flower, coming into bloom even before Van Sion and spreading skeins of glowing color on the young grass. The Trumpet group embodies those varieties having a big spreading central chalice, or trumpet. These are followed by Emperor and Empress, the well-known Bi-color and Yellow Trumpets, and the truly magnificent Weardale Perfection, primrose and white trumpet, so huge as to make understandable the emotion of the old woman who, beholding a camel for the first time, exclaimed; "Why, there

ain't no such thing!" Almost equally splendid are the giant trumpets, Van Wavern's Giant and Olympia.

During last spring I gathered as many as five hundred of these at a time, and carried them in great baskets to friends in town, where, my eccentricities being well known and tolerated, only the beauty of the flowers excited comment. Who, indeed, would remark a middle-aged man when sandwiched between baskets of giant trumpets?

Are the White Trumpets a cultivated taste, I wonder. At any rate they do not provoke the exclamations which invariably greet the giants. To me, Mme. de Graaff, with a milk-white perianth and lemon yellow trumpet which quickly fades to ivory, approaches perfection, although Melisande, a fine and rather expensive novelty without the modest drooping effect of Mme. de Graaff, and with a trumpet exquisitely reflexed, is even lovelier. Alice Knights, Mrs. Thompson, Loveliness and William Goldring, the fragile appearing "Swan's-neck Daffodil," with gracefully pendent flowers, are also very satisfactory, as is William Milner, a tiny dwarf variety.

The double sorts remind one of old-time gardens; there are the Golden Phoenix, or "Butter and Eggs," the Orange Phoenix, sometimes known as "Eggs and Bacon," and the Silver Phoenix, known to our forefathers as "Codlins and Cream." Though not so attractive as the single kinds, they are very distinct and charming. A newer sort, Argent, is an improvement over these. The old Van Sion, whose rich yellow petals soon take on a decidedly greenish tinge in this climate, is a fixture in all farmhouse gardens and much loved by the children.

According to the classification adopted by the Royal Horticultural Society, Narcissus having cups that measure less than one third of the length of the perianth segments (or "petals"), are known as Barrii; those with cups measuring from one third to nearly equal the length of the perianth segments are designated Incomparabilis; and those of the shallow-cupped Narcissus having a white perianth and a cup of white, cream or primrose, as Leedsii. The Poeticus Narcissus have a snowy white perianth and a flattened cup bordered with scarlet or crimson. Jonquils (and it is well to remember this, as no name among flowers is more often wrongly applied) are comparatively small flowers, usually in clusters of three or four on a stem, golden yellow, very fragrant with round leaves. The above are the more important classes, although there are the Triandrus Hybrids, Cyclamineus Hybrids, etc.

Among the Leedsii none holds for me a more potent charm than Evangeline, a large waxy white flower with a cup of citron yellow; it has a delicious perfume and lasts for a long time in water.

Mrs. Langtry and White Lady, both Leedsii forms, which have cups fading almost to pure white, may be planted in quantities, as they are inexpensive. I have large numbers naturalized in the orchard, where they multiply and flower ungrudgingly. They are splendid for cutting and equally satisfactory growing.

Homespun, a rather new Incomparabilis, is a robust-looking yellow, bright as a sunbeam and wonderful in form and substance; it has a large cup of the same tint and its color is particularly glowing. It lasts well when cut.

Another favorite of mine is the Bicolor trumpet Vanille, not the least of whose attractions is a delightful, vanilla-like odor. I am fond, too, of Apricot, a Bicolor Trumpet, whose yellow trumpet changes to a fascinating pinkish-apricot; it, also, is faintly scented.

Sir Watkin, a yellow Incomparabilis, known vulgarly as the Big Welshman and Giant Chalice Flower, is an old and excellent variety for naturalizing and bears a large flower.

Bullfinch, a newer Barrii, with a milk-white perianth and large, shallow yellow cup; Duchess of Westminster, an exquisite Leedsii, almost pure white in color; and Maggie May, another Leedsii with an unusually deep cup and almond-shaped petals and not at all like what its queer, out-of-date name might suggest, are all splendidly worth while.

Firebrand, a Barrii, and Will Scarlett, an Incomparabilis, are two of the most strikingly handsome of the red-cupped sorts. Firebrand has creamy perianth segments and a cup of deep orange-scarlet. It does not bloom very freely for me, but the

© *Chester J. Hunt*

HYBRIDIZED IMPROVEMENTS IN NARCISSUS

Circlet (upper right), Masterpiece (upper left), and Queen of the North (below), are a distinguished trio. Circlet is a Barrii with white perianth and flat chrome-yellow eye. Masterpiece (also a white-petalled Barrii) has a crinkled, orange-red cup. Queen of the North (Leedsii) has a fluted cup of pale primrose-yellow and large, glistening white petals

color of the flowers more than compensates for mere numbers of blooms. Will Scarlett, more than ordinarily well-named, is most unusual and, though a somewhat loosely put together flower, is, nevertheless, very handsome; it has a white perianth and a large cup, elegantly frilled, of flaming orange-scarlet. This flower, with the possible exception of the largest Trumpets, attracts more attention from the casual observer than any other in my collection.

Perhaps the most daintily finished and perfectly formed of the newer varieties, and entirely unlike any other Daffodil, is Incognita, a Barrii of rare beauty, with marvelous almond-shaped petals and an oddly formed cup of apricot. Castile resembles it slightly, but the petals are much more starry.

Among other remarkably good sorts are Queen of the North, Czarina, White Queen, Great Warley, King Alfred, Lord Kitchener, Masterpiece, Circlet, Bedouin, Mermaid, and Cleopatra; and among the Poeticus, Thelma and Epic, as well as Mrs. Chester J. Hunt, which, though a Barrii, approaches the Poeticus type. In fact, among the many Daffodils catalogued by our best dealers scarcely one has given my roseate expectations a set-back.

Anyone Can Grow Them

THE culture of Narcissus is very simple. I plant my bulbs as early as obtainable, usually late in September, covering them with about five inches of earth, although some growers advocate more shallow planting. The bulbs are perfectly hardy, although benefited by a mulch of leaves or litter which should be removed in March, and do not seem particular, as a rule, about soil. I use only bone meal as a fertilizer; stable manure placed near the roots of the bulbs will cause them to rot. The rarer varieties, which are grown in the borders, I mulch the first winter.

So, I repeat, let those who have seen the lordly Hollyhock fall victim to rust; the queenly Rose sulk and grow anaemic; the gaudy Tulip refuse even to appear above the soil; and the Lilac buds succumb to "an envious sneaping frost that bites the first-born infants of the spring," take heart again and listen to the cheery note from the trumpet of the Daffodil—the flower of joy!

THE POETS' NARCISSUS

One of the most satisfactory of all the popular bulbs, not high priced, growing well in average conditions, fragrant and pleasing in color,—dazzling white with shallow scarlet edged cup of light yellow. Of the several common forms Ornatus comes earliest, is somewhat slender, with flat spreading flower; Poetarum, late, sturdy, has reflexing petals of great substance (shown above)

HE SAVED THE POETS' NARCISSUS

I AM reminded of a little bit of Daffodil history that is worth recording at this time. The association arises through the news of the death of Mr. John K. M. L. Farquhar, the progressive seedsman and nurseryman of Boston, coming just as we are thinking of Daffodil planting time. The facts in the case are probably known to very few; and it was only recently that they were recounted to me by my late friend—and he had many such stories to tell.

John Farquhar was at the Chiswick Gardens of the Royal Horticultural Society some forty years ago, as assistant to my father, A. F. Barron, who was then Superintendent. The place was rich in a vast variety of plants of all kinds that had been brought together from all parts of the earth for study and comparison, for the R. H. S. had been a great pioneer in plant knowledge. Fortune's pioneer Chinese collections were distributed from there and I myself recall some of the originals standing there a few years ago. They are all gone now, every last trace of them, for I went over the spot this summer. There were also many interesting monuments of other collectors such as the old original Wisteria all of which are gone—the Wisteria covered a whole house side. It was ruthlessly cut down even though the wall on which it grew still stands as part of a good garden!

But to my story of the True Poets' Narcissus: Peter Barr was reviving the Daffodil and collecting obscure or "lost" varieties, and it is to his great enthusiasm at that time we owe our present-day worship. Naturally he culled over the collections at Chiswick, and had exhausted them, as he thought. John Farquhar had observed an obscure small clump of Narcissus that seemed backward but, keeping it under observation, at last saw a few flowers open. Calling my father's attention to its lateness, he was advised to take a bloom to Mr. Barr, who at once, and with characteristic enthusiasm, recognized the then considered lost True Poets' Narcissus, N. poeticus poetarum. Thus was this splendid form recovered to our gardens, and I lay this tribute of honor to a man whose enthusiasm for gardening in general in any form has really done much for us.

L. B.

SO-CALLED "GARDENS" IN ANCIENT INDIA

E. W. SLATER

Where Artificial Effects in Water were the Essential Feature as Suitable to a Torrid Climate; Plants Being Mere Accessories—Passing of the Old under Pressure of Modern Western Ideals

GATEWAY WITH WATER COURSES OF THE TAJ MAHAL

The central channel has a long row of fountains down the middle and forms the main feature, to which the supporting columnar evergreens and framing trees give emphasis

THE distinctive features of the ancient Indian gardens are being altogether lost, and are being replaced by the gardens which are typical of the West. In horticultural work Indian artists had a skill and a taste which was not without its value. It was the Mughal rulers who gave the greatest attention to the cultivation of gardens, and they came from Persia, a land where gardens are the most picturesque in the East, maybe in the world. The gardens of Persia have been praised by many a skilful poet, while not a few artists have shown her glories on the canvas.

No wonder then that the Mughal rulers should have sought to introduce into the country they had invaded something of the glory of their own land. Then too, in Rajputana, the Hindu rulers devoted considerable attention to the cultivation of their gardens, and still a few remain to show us what could be done by those artistic workers. But for the most part, the ruling princes of India are more and more enamoured of the Western idea of a garden, and wherever possible, lawns and open places, wide roads and parks are being made.

The authorities in British India have shown little desire to carry on the gardening schemes handed down from the Mughals, though earnest appeals have been made in connection with the building of the New Delhi, that the Indian scheme should be followed as far as possible.

A little observation of a few of the features of the ancient gardens, discloses, as may be expected, that the features generally were such as conformed to the conditions of the country, and were adapted to a land that knows the discomforts of a hot climate. How far they might be followed in the West is a matter on which it is not easy to give any opinion, though there is no doubt that in countries where the summer is very hot, certain features may be adopted.

Shade and Cool in a Hot Climate

THE Mughal rulers believed that "a garden was the purest of human pleasures" and stinted neither time nor money in the execution of their schemes. We read of Babar making many long, wearisome journeys to one of his residences in order to supervise the garden he was forming. The Indian was anxious to create a garden which would give him the necessary shade and afford him a place where he could rest in comfort during the long, hot summer months. Water thus became the central motif. He also sought to provide himself with a place in which he could exercise his imagination and sentiment, and with this in view, his garden was so arranged that it was most attractive during the moonlight. It is interesting to note how anxious these rulers were to obtain delightful moonlight effects, and many travelers have been most impressed by remembrance of the gardens by moonlight.

Scarcely a visitor to Agra will miss the opportunity of seeing the gardens of the Taj on a moonlight night. One instinctively feels that the architect had such a possibility in his mind when he created the gardens and the tomb. We know from the accounts that have come down to us how greatly the wealthy nobles appreciated the moonlit garden, and many a romance is woven around such scenes. We may be sure that in the ancient gardens these two features were always kept in view.

One cannot imagine an Eastern garden without a system of

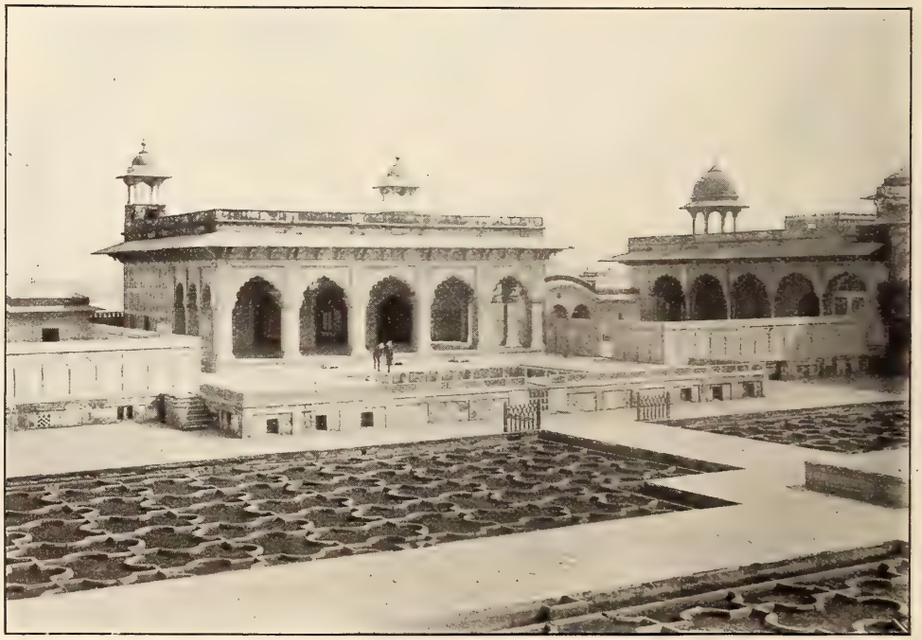
WATER CHUTE IN MUHAMMADAN GARDEN

Water falling from a considerable height is introduced largely for the fact that the spray has a cooling influence on the air

water, and that not merely for the feeding of the plants, but for the cooling of the atmosphere inside the garden. Running water was essential to an Eastern garden. In some cases the water was brought into the garden by means of long channels which then divided into many smaller channels supplying the various parts of the gardens; or a running stream was dammed and brought into use. When the Emperor Babar came to India he was greatly disappointed at the lack of suitable water conditions for his gardens, and when he sought to make a garden worthy of his old country near to Agra, he had to spend large sums of money in digging wells to give him the necessary supply. Unless the gardener was assured of an adequate supply of water for his channels, and his fountains, he would not begin his work.

It is impossible at this time to give more than a few notes on the methods by which the water was made an essential part of the Indian garden, but some useful information can be obtained from a book written several years ago "The Gardens of the Great Mughals" by Mrs. C. M. Villiers Stuart; and from the accompanying illustrations it will be seen how important a part the water plays. In the Taj Mahal it will be seen that the central channel, which has a long row of fountains, is the main feature of the garden. From the central tank two arms go, at right angles, the whole width of the garden, while again from these smaller branches go to the inner parts. Some of the most wonderful reflections can be obtained of the beautiful Taj, a fact which adds to the peculiar beauty of the channel and tank scheme of the garden.

Not only did these Indian gardeners introduce water by means of such channels as have been referred to; but it was not uncommon, where a good fall could be obtained, to have one or more waterfalls. While the effect of these is most picturesque there was, above all else, the resulting cooling of the air. Seldom does one see anything to correspond with these artificial waterfalls in the gardens of the West, and, while they may introduce an air of artificiality, there can be no doubt they lend considerable picturesqueness to the garden as a whole. Again, we find the use to which water is put in a Zenana Garden in Udaipur, the Fairy-land city of Rajputana. The square tank fills practically the whole of the garden. In the centre is erected a dainty pavilion, under which the ladies sometimes sit. The whole effect of this enclosed garden, used exclusively by the ladies of the royal household, is pretty; while it affords the coolest shelter from the hot winds of the desert around. The island gardens of Udaipur need a special note, for they are unique in many respects. Advantage has been taken of the islands in the lake, for these have been transformed into island gardens. On each of these is a palace, and around the palace, which is built of marble, there is a lovely garden, with the usual water channels running from one side to the other. The water effects, both inside the island and outside are wonderful, and leave an impression not soon erased. Percival Landon describes his impressions as he visited these island gardens. "Tier above tier the snowy walls and terraces rise from the very ripples of the lake, where under the kiss of the wind their reflection makes a matted tangle of white. Here and there the whiteness of the half-translucent architecture is relieved by a touch of green where a banyan or a group of acacias rises from a walled-in garden plot, but the same quick white, of half a hundred shades and values, argent in the sun and veil-blue in the shadows, spreads along the palace wall or points itself into the dome and pinnacle of the roof, till the upper line cuts the blue of the air, white from end to end of the thousand feet of the palace sky line,

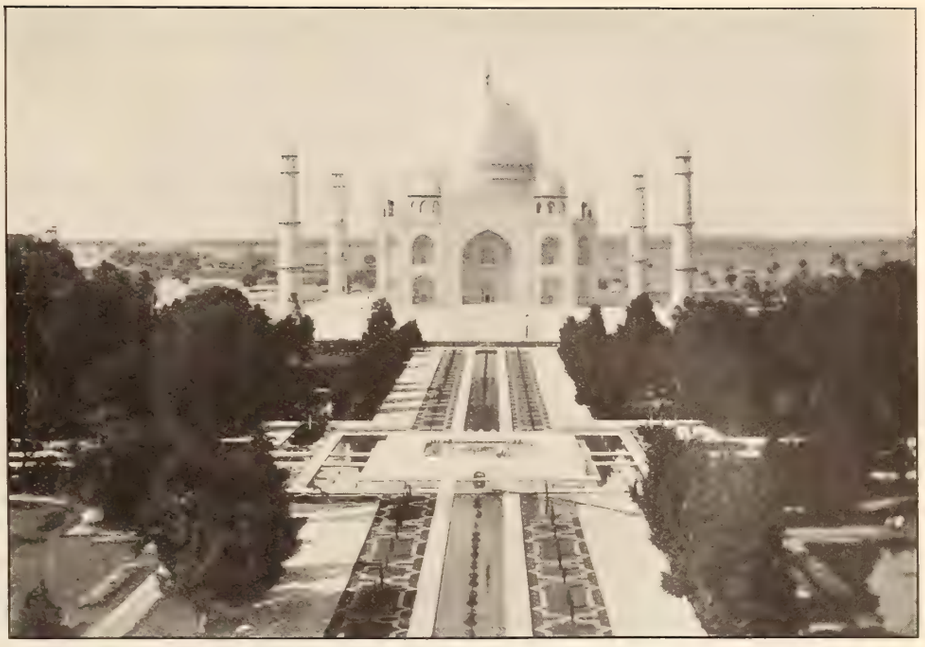


ANGURI BAGH IN THE AGRA FORT

The one garden left complete in these Mughal palaces, with its elaborate stone design having only grass between its masonry features. Gardens were not yet made for or by plants

save and except just where, at one end, an audacious and flaring Bougainvillea leans in lambent magenta and dark olive-green over the top-most and most secluded court of all-white, white, and from end to end, white."

In several gardens waterfalls or chutes are to be seen to this day, and in the ruins of others they may still be traced. In some cases the water has been lifted out of deep wells outside and rushes over the carved stones into the garden. These marble or stone chutes are carved in different patterns, cut ingeniously at an angle so that the water running over them, was thrown up and broken into splashes and ripples. Shell and wave designs were the favorites. In most gardens, even the small ones that allowed only a drop of a foot or two, these chutes were to be found, and certainly are one of the characteristics of ancient Indian gardens.



THE GARDENS OF THE TAJ MAHAL
Where plants played a minor part and the chief claim to beauty rested on symmetry of design

Stonework as an Equal Feature

SECOND only to the water schemes, as an important feature of ancient Indian gardens, is ornamental stone work. All along the channels are pavements, generally of white marble, while geometrical patterns are worked out between the long slabs. One of the most interesting of these design gardens is that known as the Anguri Bagh, in the Agra Fort. The pity is that it has been so long neglected, and no attempt has been made to restore it to its old beautiful condition. But it is one of the most perfect examples of the kind of garden the Mughal rulers loved to make. "The Anguri Bagh in the Agra Fort is the one garden in the three great Mughal Palaces left complete with its old stone and marble details; and yet there it lies, bare and empty, with only grass between its masonry, like some great, elaborate, jewelled design rifled of its colored gems, turning its gaping empty setting to the sun." If this could be restored it would afford one of the finest examples of the possibilities of such gardens. The garden is divided into four squares, and each has its separate border and central plot, like the old carpets, full of brightly colored flowers woven into a close geometrical shape. They were boldly massed flowers of varying heights and beautifully chosen colors, the Lily beds, the Roses, the Narcissus, Anemone, and Tulips. The surrounding border was treated differently in oblong beds of alternate coloring, or else with single flowers like the groups of Hollyhock and Tuberoses. In the larger gardens it was possible to introduce the larger trees, but in the smaller ones, a few small Cypresses had to suffice. A stone trellis used to enclose the flower-beds, and it is thought that this supported large vines.

Gardens Associated with Tombs

IT MAY be noted in passing that the finest gardens are those opened around the tombs of the great, for these buildings are usually erected before the death of the one to rest here, and are used as a kind of summer house. In the case of Sikandra, where the remains of Akbar lie, we have a fine example of a Mughal garden, though many parts have been allowed to deteriorate. It is laid out on the plan of a cosmic cross, in a huge, square enclosure with high battlemented walls. In the middle, raised on a wide platform, stands the mausoleum, on each side of which are tanks with central fountains supplying the water for the narrow canals which once ran down the centre of the raised stone pathways. Though much has been lost, the effect is still very impressive and affords another striking example of how effective the extremely artificial geometrical old so-called gardens could be.

HINDU ZENANA GARDEN IN UDAIPUR
Water everywhere, reflecting the brightly lighted walls of the surrounding buildings and becoming the dominant feature of what is called a garden

LOOKING INTO A CITY GARDEN

Designed and Planted by
CLARENCE FOWLER, A. S. L. A.

OUTWARD THROUGH THE DOORWAY

This garden is now four years old its maker tells us. In fact here is its history in his own words: "When the garden was first laid out the lattice at the back did not exist, as large Privets came up above the wall from the adjoining property. The cold winter three years ago killed them; the trellis was put up a year ago and some Wisteria set out to climb over it. The small trees in either corner are Japanese Tree Lilac (Syringa Japonica). The small Rhododendrons on each side of the pool are Boule de Neige. In the centre beds are some of the hybrid Rhododendrons which have never had to be replaced; near these Forsythia was planted and has done extremely well; in front of these we used Deutzia gracilis; for vines Wisteria. The beds were bordered with Box, and German Iris was grouped in front of the shrubs just back of the Box hedge. In the fall the beds were filled with Tulips of the Rev. Ewbank and Clara Butt varieties. When these were through flowering the space was filled with pink Geraniums." This use of trellis is very effective, screening out ugliness and creating a pleasant sense of air and lightness. Garden at East 63rd Street, New York City

THE DOORWAY AS SEEN FROM THE GARDEN
A reverse view of that shown on the opposite page

TO CITY GARDENERS

Some suggestions by Mrs. James Metcalfe, Vice-President of The City Gardens Club, and, as might be inferred, a lover of gardens who not only talks about planting but does it as well. In reply to our inquiries Mrs. Metcalfe writes:

"Trees that thrive under city conditions are: Plane or Sycamore; Maple (Norway); Ailanthus (though thought common is really very pretty and sturdy); Poplar (Lombardy, Carolina, Bolleana); Elm (if area is sufficiently spacious).

"No tree should be planted unless the following precautions are taken. First a hole at least three feet deep and three feet square must be filled with good soil that has been freely mixed with well rotted manure. Soil that has not been turned up to the light and air is usually sour, or might, in city yards, be impregnated with salt water turned out of ice-cream freezers. Such soil is death to any planting. Trees set out in spring should never have their roots exposed long enough to become dry, and should have the top well pruned after planting.

"In enclosed yards where there is no sunshine it is better not to have any planting whatever. Neat little walks of gravel or flagstone; a seat or two; a lattice (painted light green) against the usual, too bleak board fence; and a free sprinkling of tubbed greenery create a garden atmosphere.

"For early spring bloom, plant in autumn Tulips and Narcissus. For summer bloom plant Nasturtiums, Marigolds, Calendulas, Zinnias, Petunias, and Verbena. These, of course, where there is sun for at least half a day, and the flowers will bloom until frost."

TRELLIS ADDS THE FINISHING TOUCH

Here again trellis-work serves doubly as screen and decoration and has been judiciously selected to harmonize in design with the wall which it crowns. Garden of Mrs. A. E. Schroeder, East 64th Street, New York City

Mattie Edwards Hewitt, Photo

THE NEW CRAFT OF MAKING PLANTS TO ORDER

II. INCREASED CROPS THROUGH USE OF HYBRID SEED

J. L. COLLINS

Dept. of Genetics, California Agricultural Experiment Station

EDITOR'S NOTE:—Breeding plants with a definite ideal is a positive development of recent years. The steps by which this condition has been reached have both the romance and charm of a fairy tale. Many gardeners, however, are still somewhat in the dark as to the possibilities of hybridization, although the matter has so impressed the great seed-growing industry as to be likely to lead to quite new methods of work in producing seed crops commercially. A subject of this nature is perforce full of technical terms—many of which had to be made for the purpose—and cannot be presented in the words of the kindergarten; but we feel that Prof. Collins has acquitted himself ably in the task of laying before our readers, in as plain terms as practicable, an outline of the present status of knowledge of this newest and alluring development of the gardener's craft. The third and concluding article in this series will deal with the improvement of our Fruits.

MAKING BIGGER CUCUMBERS

The effect of hybridization in Cucumbers is to increase the number of fruits to the plant rather than marked increase in size. Nos. 1 and 3 are parents; No. 2, the first generation hybrid. Smallest and largest cucumbers of parent varieties and hybrid are shown

IT HAS been well established (as the result of numerous investigations during the last half century) that the first generation hybrid of two varieties, or even of two species, of somewhat different constitution, is often more vigorous in many ways than either of the parent varieties grown under identical conditions.

Many plant breeders have therefore been led to test the possibilities of utilizing this increase in a commercial way with the result that there is now at hand a considerable amount of reliable information concerning kinds and varieties of plants to select for parents and the best methods for securing the hybrid seed.

THE increased vigor displayed by the hybrid is known technically as "heterosis," that is to say "hybrid vigor," and is thought to be due to hereditary growth units carried in the germ cells of the plants in just the same way as are the units causing the production of flower-color or the shape of the fruit. The greatest degree of this "hybrid vigor" results when the cross brings together, in the hybrid, the greatest number of *different growth units*. This condition results when the plants are of different varieties not closely related.

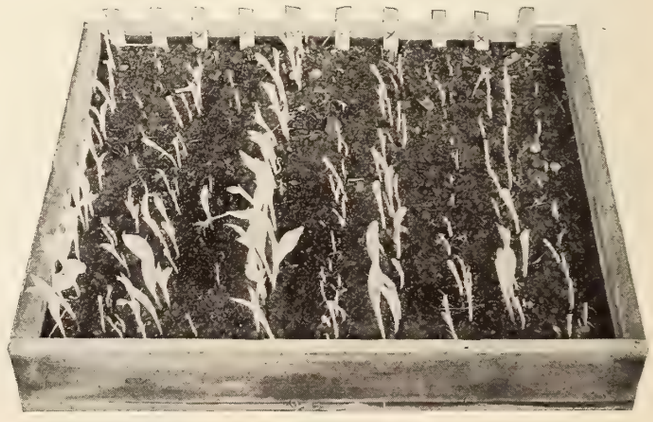
To secure this "hybrid vigor" in its greatest degree, the cross must of course be made with plants that are *not of the same variety*, for if they are the same they will contain the same hereditary growth units, and such a cross therefore would not increase the number of *different* growth units.

As a matter of business when dealing with annual plants grown from seed, the subjects chosen for the work should be those which produce a large number of seeds in a single fruit, because only in such will the benefits derived more than compensate for the expense of producing this hybrid seed. Exception can be made in the case of some dioecious plants (i.e. those having pistillate and staminate flowers on different plants), because one variety can be "rouged" of all staminate plants and the pollen applied by shaking a branch of the desired staminate plant over the selected pistillate plants; or the two varieties to be crossed may be planted in alternate rows and all the pistillate from one variety and all the staminate plants from the other variety removed, thus permitting the wind and insects to do the crossing. In either case all seed produced will be hybrid.

Seedlings grown from this seed make a very much more rapid growth than do plants from uncrossed seed. Which fact is a distinct cultural advantage in the cucurbit family (Melons, Cucumbers, etc.) as the rapidity of growth greatly reduces the danger of damage by the striped cucumber bug which often attacks the young plants as soon as they start pushing up through the ground. Similarly, Corn grown from hybrid seed will pass through the early seedling stage, when the cut-worm gets in its work, much more rapidly than seedlings from the same varieties uncrossed.

The first generation hybrid between commercial varieties of Tomatoes gives such a marked increase in yield that the production of hybrid seed for commercial use has been recommended. Increases ranging from 11 to 17 per cent. have been secured in this way. If hybrid seed giving a 15 per cent. increase over the uncrossed varieties had been used for the Tomato crop of 1918 the total production in the U. S. would have been increased by 2,872,367 tons. Think of it! The *hybrid Tomato plants produce both more and larger fruits* than do the non-crossed varieties.

Indiscriminate selection of plants has given desirable results, but better results would undoubtedly have been obtained if high yielding mothers had been selected for one or more generations previous to the first crossing. Such selection can be easily accomplished, as Tomatoes are readily self fertilized. The high yielding pure strains having been isolated should be preserved for future crossing, and then the crosses can be duplicated at any future date. This is a very important consideration for the grower who is desirous of putting the same grade of product



GETTING A QUICKER START IN LIFE

Hybrid seed Corn will germinate much more quickly than non-hybrid seed. Rows marked X are from hybrid seed, the other rows are from non-hybrid seed. Both kinds of seed produced by the same parent plant

on the market year after year and may also have an appeal of interest to the experimental home vegetable grower. As Tomato seed remains fertile three to seven years, it would not be necessary to make crosses oftener than once in three years. The seedsman as well as the farmer can profitably raise hybrid seed, provided a guarantee for the quality and quantity of the crop is not given for more than one generation; since the grower will have to use original first generation hybrid seed every year. The vigor secured in the first generation is reduced in the second and later generations from the same cross.

Definite Products

THE best results of crossing can be obtained by keeping within a species and crossing the distinct varieties and the distinct strains. To insure a desirable commercial Tomato, the hybrid seed producer must keep in mind the inheritance of such qualities as smoothness, color, size, shape, and earliness. For smooth fruits cross only varieties with smooth and even surfaces, as roughness will appear as a "dominant" character in the first generation. (See article in this series in last month's GARDEN MAGAZINE). Plants that have shown a tendency to sterility must be avoided as that factor may cause irregular development of the shape.

The inheritance of color in Tomatoes has been carefully studied, and it is now known that the dark red is dominant to the pink and the yellow, and that the pink is dominant to the yellow color. Thus, to obtain a red fruit it is necessary to have one parent red; to secure a pink fruit one parent must be pink, the other may be pink or yellow, but not red; and to obtain a yellow hybrid both parents must be yellow.

Size is inherited as if blended into an intermediate condition. Thus crossing large fruits results in large fruits; crossing small fruits results in small ones; and crossing a large with a small fruit will produce one slightly smaller than the larger parent. The fruit of a hybrid from two large fruits is often larger than either of the parents.

Shape is inherited in much the same fashion as size, and the same considerations need be given to this character.

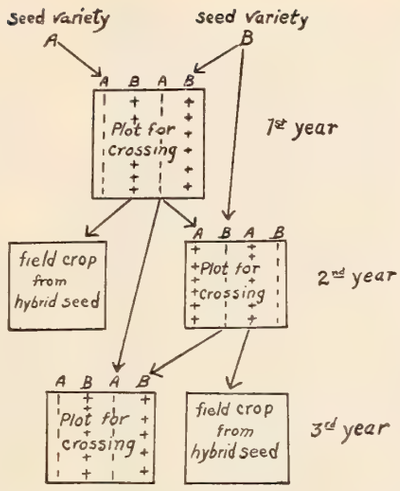
Earliness is somewhat increased by crossing; but a marked increase in early maturity is noticed when crossing strains that themselves are very early maturing.

Facts of Increased Yield

THE first generation hybrid of the two Cucumber varieties, White Spine and London Long Green, exceeded the higher yielding parent by 24 per cent., and that of Fordhook Famous and White Spine exceeded the better parent by 39 per cent. The character in which increased vigor in Cucumber crosses is mostly evident is in the number of fruits per plant. All the hybrids tested exceeded the more prolific parent from 6 to 27 per cent.

Plants of this family (which includes Watermelons, Canteloupes, Squashes, and Pumpkins) are monoecious—i.e. pistillate and staminate flowers are separate but on same plants—and produce a large number of seeds per fruit. Although definite knowledge of the heredity is available for only a few of these there is reason to believe this principle of hybrid vigor will be of value in all of them.

In Corn, which is a dioecious plant in practice—because the tassel (stamens) and silk (pistils) on the same plant ripen at different times—and wind pollinated, the method employed to secure hybrid seed is very simple and easy. The two varieties to be crossed are planted in alternate rows, and all the tassels of one variety are removed. This requires going over the rows about three times at intervals of several days in order to detassel all the plants. The silks on the detasseled plants will receive pollen from the variety not detasseled and the resulting Corn will be hybrid. Seed for the next year's crop could be selected from these detasseled rows. As the corn on the rows not detasseled will be pure for that variety, enough should be collected for planting the crossing plot for the *next two* seasons. By holding over enough of the pure variety for planting the second year, and by alternating each year the variety to be detasseled no extra plot of the pure strains need be grown at all.



THIS SHOWS HOW IT IS DONE WITH CORN

Diagram illustrating a method of producing hybrid seed corn. By alternating the variety detasseled each year and carrying over seed of the pure variety for two years, no extra seed plots are needed for keeping the pure strains going. Crosses indicate detasseled rows producing hybrid seed

Fifty first generation hybrids have been tested by Dr. D. F. Jones who found that 88 per cent. yielded more than the average of their parents and that high yielding parents produced high yielding hybrids. Naturally, crossing of different colors of corn is to be avoided, as the corn ears produced on the first generation hybrid plants would contain a mixture of the colors of the parents.

HETEROSIS is no longer a hazard as a commercial asset. Experiments have demonstrated beyond peradventure that the grower who puts it into practice will be amply rewarded. Nor is it being neglected by commercial seed companies. In the spring of this year Dr. H. J. Webber, a leading man in plant breeding work for 30 years, first as plant breeder for the U. S. Department of Agriculture, then professor of plant breeding at Cornell University, and but recently Director of the Agricultural Experiment Station of the University of California, left that institution to become the director of a new department for the production of tested hybrid seeds of a commercial concern at Hartford, North Carolina. It would seem that it will be but a short time before other seed companies will establish similar departments for the production of hybrid seed for market and garden and field with the certain result that the crops of the country will reflect a greater annual production.

WALKS AND TALKS AT BREEZE HILL—IV

J. HORACE McFARLAND

Wherein is Reflective, Critical, Philosophical, and Friendly Comment about Plants and their Behavior Inspired by Personal Experiences in a Garden Made for Pleasure

THE chestnut-bark disease which is exterminating one of our noblest and most valuable American forest trees was an imminent fact when I bought and planted two fine little Chinquapins. I was taking a chance, but not much of a chance, for there were no Chestnuts in the immediate vicinity from which the spores of the dread disease might be carried to my bushes.

TEA-LEAVED VIBURNUM IN FLOWER

Lovely in mid-May and equally lovely when hung with light scarlet berries in its September fruiting season Viburnum theiferum is certainly a prize shrub

Seven years have passed, and the "chinks" are fine bushes, about seven feet high and through. Though planted in a rather shady and damp location, and crowded in with a Magnolia, some Witch-hazels and Spice-bushes in a mass planting, they seem not to have resented absence from the dry and rocky slopes which are their native preference.

The Dainty Chinquapin

THESE plants of Castanea pumila have been blooming and fruiting for four years, and this year have been particularly pleasing. The flowers come earlier than those of the forest Chestnut, and they are decidedly handsome. The foliage is good and well retained through the summer, and the fruit is as toothsomely delightful as the bur-clusters that contain it are ornamental. I would have it for its flowers if it had no nuts, and for its nuts if it had no obvious flowers, so I have been doubly rewarded, having both.

The nuts are small, almost black, and are customarily but one in a "bur," though I have frequently found three. Frost has nothing to do with opening these burs, which mature here in September, and silently drop the nuts, all convenient for the vigilant chipmunks who miss none of them. By vigilance partly as persistent as that of the "chippies" I have this year harvested for myself most of the crop, going to the bushes early each morning, and carefully opening each bur that shows a peep of the brown-black nut within.

The quality of the nuts of the Chinquapin is its great recommendation as a fruit. Sweet, fine-grained and rich in the delectable chestnut flavor, they are not at all hard to eat.

The Tea-leaved Viburnum and Some Others

IN APRIL, 1916, I planted the Tea-leaved Viburnum (Viburnum theiferum), another Wilson introduction and said by the Arnold Arboretum bulletins to be "one of the two best Wilson Viburnums." The next season the dentatum stock on which it was grafted got away, and some time was lost in consequence. It bloomed in 1918, nevertheless, and fruited in due course. Since, it has flourished, and on a late September day it is one of the most pleasing objects in the "Locust Walk" border at Breeze Hill.

The flowers come in mid-May, and the small flat corymbs of fertile white blooms make a charming effect in the midst of the good foliage. The leaves justify the name, and they are of unusual thickness and substance, deep green above and light green underneath. They bronze in fall, and as the plant is of rather compact habit, it is at all times an agreeable object.

But the fruit! Clusters of pea-shaped, light scarlet berries, hard, shining, and graceful, hang pendant from between the two leaf-buds that are all ready for next year, and outside of which are the present leaves, soon to drop. When they do drop, the plant will be even more brilliant until frost disorganizes and shakes down the seeds.

I highly prize this Viburnum as a distinct and pleasing member of a shrub family not half appreciated in American gardens. Why is it that when one plant of a genus makes a splash, as does the Japanese Snowball (V. tomentosum plenum—plicatum as we usually have it), we promptly drop all the others for it? I always did have some sympathy for the eleven sons

CHINQUAPIN (Castanea pumila)

Desirable because of its feathery bloom and the small, sweet nuts hoarded in its decorative bur-clusters which —unlike most nuts—ripen before frost

of Jacob who had to stand for daddy's pet Joseph with his Neapolitan ice-cream coat! Viburnum tomentosum, the unvaried species, is far finer than the "double" plate-book pet that has crowded it back for many years, and others of the family are nearly as good. It is the Hydrangea "p. g." story over again.

Annual Transplantings

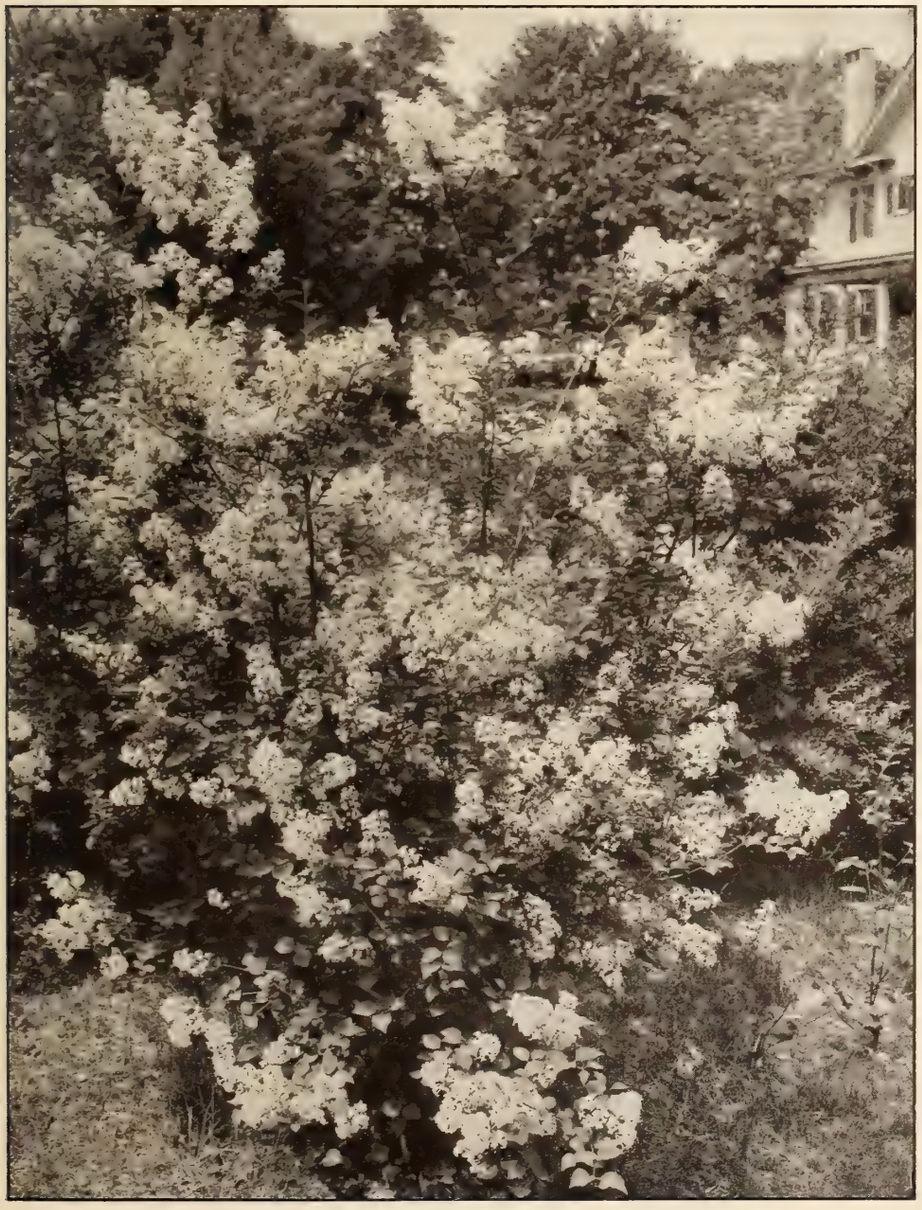
THE showing of Boltonia and Asters I have referred to, and some other successes, have settled into a belief a hint I had that certain plants need transplanting every year, to do their excellent best.

These perennials I have mentioned were far finer after being moved than they ever were when two years or more in the same spot. I found, too, that the somewhat irritating Achillea The Pearl became tractable and far more usable when transplanted, even late in the season when I had to cut off the tops. More bloom, better bloom, better stems and far less root rambling resulted.

The Red Sneeze-weed (Helenium autumnale rubrum) has also proved itself better after a move, as has Physostegia virginica. This latter plant if not moved tends to become a pest, while under the restraint of transplanting it is a prize, with its distinct and rich glossy foliage, and its spikes of successively opening pink flowers.

TWO PLANTS WHICH TAKE KINDLY TO MOVING

Sneeze-weed (Helenium autumnale) shown above on left and Boltonia or False Chamomile on right



AN INDEFATIGABLE LILAC

Graceful in habit and flowering when very young, Syringa pubescens is a Lilac of unusual quality. Though not at all stocky in appearance it possesses great vitality and has been known to show bloom three times a season

A Three Times Blooming Lilac

A GOOD plant of that most distinct and desirable Lilac Syringa pubescens is not far from the "chinks," and when I was patiently pinching apart the burs of the nut tree in late September I happened to get a glint of a flower on the Syringa. It was small, to be sure, but no less welcome and surprising. It is, I think, the third showing of bloom on this plant this year.

Seemingly no disseminator of hardy plants has as yet taken up this lovely Lilac, though it is easy to propagate, flowers when very young, and is the sort of thing that ought to make a nurseryman happy! It differs notably from other Lilacs in its habit of showing bloom from the ground up, all the way, so that it is literally, by reason of its regular rounded conical form, a pyramid of bloom. The flowers are individually small, but in large clusters of pale lavender, with a pleasant and individual odor. The bloom comes a bit later than the vulgaris hybrids—I find it recorded at Breeze Hill as decorating the first and second weeks of May for several years.

My plant was a little one from the Arnold Arboretum when it was set on November 10, 1913, and it was notably fine in bloom by May 15, not failing since, and twice giving a scanty second crop. The foliage is small, and sometimes in fall turns to a fine bronze color.

This fine Chinese native ought to be a find for the hybridizer, introducing as it would several desirable qualities—in color,

fragrance, blooming habit, and distinct foliage. But first some nurserymen need to make up and produce stock of a plant far more desirable than the average shrub "novelty."

A Fall Combination

THE necessary removal of some shrubs that, while very desirable in themselves, expanded beyond the proper limits of the place they had used for seven years, gave me an oval space in the west garden in which a pleasant fall combination was worked out. In the centre of the space I put a dozen good plants of Boltonia latisquama, and around these set selected Asters—all variations on Aster novæ-angl æ, I think. The Asters were in turn hedged in with irregularly spaced plants of a flesh-pink giant Zinnia.

When I came home after the vacation absence, this scheme had bloomed its proof of success. The dainty pink of the Boltonia, with the clear blue and the deep pink of the Asters, and the soft tones of the Zinnias made a most agreeable showing, at its best in full sun.

That vacation, by the way, is always rather a regret to me, who take the garden as better than golf or summer-hotel gossip. Why do I leave the shade, the beauty, the comfort, and especially the good vegetables of Breeze Hill, even for the wild beauty of the Eagles Mere hills and the cosy little Bide-a-Wee home we have there in the edge of the primeval forest? The only answer I can work out, apart from the habit of doing as others do which is not compelling on me, is that I cannot relax and rest in my own garden when that garden is growing. Twice in one early summer I did sit with a visiting friend a restful half-hour under the great Maple which shades the west end of the centre garden, and the sitting and the resting were both so pleasant that I was moved to wish that I myself might sometime make a visit at Breeze Hill.

Can any one tell me how to visit at home, when help is minus and weeds are plus, when the hoe refuses to move on its own power and the dead blooms flaunt in my eyes? There ought to be a way, it seems, though I have no Blue-book to guide me to its entrance. If ever I learn that way, I'll not forsake bloom and comfort, Golden Bantam corn and the early grapes, for any place where I am fed out of cans and must dress a la mode!

Why Not Fuchsias?

PERHAPS it is going afield to discuss here perennials not hardy in the middle states. Yet the Fuchsia is worth restoration to the garden, from which it has vanished as it has almost from the greenhouse. A lingering memory and my wife's preference caused me to search for Fuchsias several years ago. I got but one variety, though the labels were interestingly varied, and this has been carried along over the two winters of my possession of a greenhouse. The plants spent the summer in a half-shaded border, and last winter I grew additional plants from the cuttings taken when the summer's growth was reduced to pot dimensions.

So I have had enough plants this season to permit them to dominate several shady and half-shady borders and nooks. The result has been lovely! The plants are graceful all the time, and the abundance of large drooping flowers has been a rich reward for the little trouble I have taken.

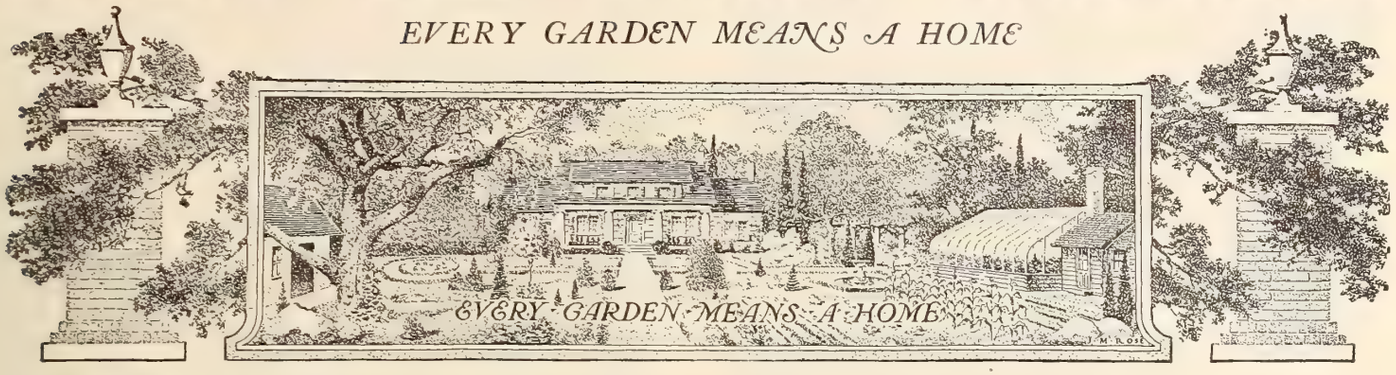
This year, after being stirred with the sight of W. C. Egan's exquisitely beautiful porch baskets of drooping Fuchsias, I adventured in more of them, Mr. Egan graciously starting me with the notable variety he uses. A dozen sorts, bought of a well-known wholesale florist, came in contemptibly little plants, poorly packed, and only a few of them have flourished. As they bloom, they all show the same flowers! My florist friend sold me more labels than Fuchsias, and I shall have to try again; for I do want several differing sorts. Who has them? And what varieties? I'd like very much to know.

AN OLD-TIME FAVORITE WORTHY OF A PRESENT-DAY PLACE

So charming a flower as the Fuchsia should really supersede mere fashion and delight the modern gardener with a flair for the "old-fashioned."

AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME



HOW MUCH DOES WATERING HELP?

ARE the plants in our gardens getting more to drink than is good for them—and for us, as measured by our leisure moments and peace of mind?

Is there a tendency among gardeners to use the hose and sprinkler to excess, paying the penalty of prodigality by having to expend an unnecessarily great amount of time and energy in combating plant diseases and repelling insect pest invasions?

This line of thought is neither as frivolous nor as far-fetched as it may at first appear; and it deserves serious consideration—from those of our readers who from choice or necessity measure the success of their gardening by standards in which economy of effort and money are highly important factors.

One doesn't have to be inherently lazy in order to desire maximum results from minimum efforts. Indeed, that, expressed in more resounding phrases, is the objective of all "scientific efficiency" wherever applied. Wherefore we may regard a determination to give to our crops—whether economic or ornamental—the least possible care commensurate with at least moderately satisfactory returns, not only legitimate, but even laudable. In the case of the vegetable garden this ambition may be part of a desire to make the plot as financially profitable as possible; in any case it is an indication of a decision that the garden shall be something to enjoy, not a burden to be endured.

On this basis, the less one has to spray, the nearer one is, by a very considerable margin, to his goal of economical achievement. Any program, method, or theory that tends to reduce the necessity of spraying, therefore, spells progress in his vocabulary. It is such a program—or, rather, as yet "a theory"—that has suggested itself to us this last summer and that is now laid on the table for examination and discussion by the neighbors.

There is a garden that we have been observing for a number of years in which spraying activities have consistently been kept close to the vanishing point. And this garden is just as free from disease and insect pests as the average—if anything, rather more than the average. Its owner makes no attempt to raise prize crops for exhibition, it is true; but he secures enough to meet his family's needs as to both quantity and quality, and that with an almost complete abandonment of the meticulous care and multitudinous precautions that many of us have come to look upon as almost essential to even the most elementary success.

What's the answer?

One is tempted to suggest "luck," with a mental reservation to the effect that the gardener referred to is rashly tempting providence. But then he has been following this same easy-going course for nearly a decade. No, we are inclining to another explanation—namely, that this garden is less in need of spraying because it is never, or practically never, stimulated out of season by supplementary watering.

In the first place, it is located on a loose, sandy, not very rich soil; in the second place, it is not accessible to any supply of water to which either hose or sprinkler can be attached. Consequently, except when there are Tomato or Pepper or other kinds of plants to set out—when the plebeian watering pot is brought into commission—the garden receives from one season to the next, only the rain that falleth, like the unstrained quality of mercy, from heaven upon the earth beneath. Whatever the weather brings is cheerfully accepted—for the rest, reliance is placed upon "conservation by means of cultivation."

Now the rest of the theory is this: Except for the cultivation given them, the plants in this garden have to work out their own salvation; they are expected to withstand such droughts as may occur and, in general, exist under conditions as nearly "natural" as garden crops can ever know. In these circumstances, is it not probable that the plants develop not only strength, sturdiness, and resistance to the ordinary attacks of the elements, but also a high degree of health and disease resistance, too?

MAY there not be a direct connection, via the route of cause and effect, between: (1) rapid-growing, tender, succulent plants assisted by the effective but artificial stimulus of frequent, regular, and abundant waterings or sprinklings, (2) an increased tendency to contract and succumb to diseases and the attacks of insect pests, and (3) the necessity of consistent spraying with fungicides and insecticides? Surely we find a parallel in the case of pet stock, domestic animals and even individuals of the human race which, being pampered, sheltered and cared for become super-dependent and excessively susceptible to trials and dangers that would have no effect upon a strong, self-reliant body brought up to look after itself.

Of course, as in all things, there is a median-line of common sense. Doubtless a complicated program of watering, spraying, and constant coddling will in many cases result in larger, earlier and perhaps higher quality products; greenhouse culture is convincing testimony to this. But measured by utilitarian standards that aim at net rather than gross returns, may not the cost of superfine vegetables and flowers considerably exceed their actual value in the eye of—and against the palate of—the consumer?

It is possible that the gardener who has a water supply and uses it, who sprays regularly in his many leisure hours,—has always done so and expects to continue to do so—will be inclined to interpret these suggestions as an attempt to make a virtue of necessity in the case of the individual who cannot water his garden. Such is not the case, however. The question is simply, "Is much of the spraying that men and women do in their gardens unnecessary under certain circumstances? Are these circumstances under their control, at least in part,

in connection with their watering programs? Are not the quickest grown, most freely irrigated, most consistently coddled plants the likeliest to be delicate, diseased and even 'hypochondriachal?'"

Who thinks so? Who thinks not? Who *knows?*

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

Californian Red Larkspur

To the Editor of The Garden Magazine:

I FOUND the dwarf Red Larkspur of California, Delphinium nudicaule, growing in a hardy garden as far north as Göteborg, Sweden—not to mention the fact that it is fairly common in English rock gardens. So I see no reason why it should be a stranger to Eastern American gardens. Its red is a rather dull scarlet, with a bit of yellow; but, grouped in a rock garden, the color is agreeable enough and the plant lends variety of form. It stands a foot or a foot and a half high.—H. S. Adams, *New York.*

Trapping Snails at Night

To the Editor of The Garden Magazine:

THIS Open Column is a feature of our magazine that I thoroughly enjoy as an exchange of ideas and experiences is a good thing at all times. No one person knows it all.

After trying many different remedies for snails, but without much success, I concluded to go after them at night while they were feeding. A lighted lantern and some powdered lime in a baking powder box with holes punched in the lid are the only weapons needed. With this outfit I have done away with hundreds of these pests every season, and while it seems impossible to eliminate them entirely, it has enabled me to keep them from doing much damage. The best time is during damp, showery weather, and it requires only a light sprinkling of lime to finish one of these creatures. Going about in the garden at night with a lantern also furnishes considerable entertainment to inquisitive neighbors.—A. A. Knoch, *York, Pa.*

A Good Late Yellow Perennial

To the Editor of The Garden Magazine:

SOME time ago in The Garden Magazine Mr. Julian Hinckley asked for information as to a satisfactory late yellow perennial. Although he "damned with faint praise" the Helianthus, I am wondering if he is familiar with the "narrow-leaved" species, Helianthus angustifolius. This is a native plant that deserves to be better known. A few years ago I got some seed from the U. S. Department of Agriculture, which describes it as "a selected variety of the native wild form of sunflower, collected in Arkansas."

I raised some plants and set them out in a bed of prepared soil—leaf mold, sand, and manure—where they were shaded about half of the day by large Oak trees. They grew about four feet high and were so attractive that on moving to a new home I took two plants along. I had to put them in a clay soil without any special preparation, but fully exposed to the sun. They got no fertilizer and no coddling except occasional stirring of the surface soil; but in October, 1920, a year after they were moved, each plant was a mass of yellow sunshine 7 feet high, with a spread of 6 feet, and carried, by count, between 400 and 500 flower heads.

The blooming period lasts approximately three weeks. The flower heads are about as large as those of the Black-eyed Susan, and the ray flowers are a clear, bright yellow, a trifle brighter than the "light cadmium" of Ridgway's "Color Standards" and considerably brighter than the illustration of this species in "Wild Flowers of New York" (N. Y. State Museum Memoir 15, Part II, plate 249). The leaves are correctly described by the specific name, for they are only $\frac{1}{6}$ to $\frac{1}{3}$ inch wide and from 2 to 7 inches long. They are a glossy deep green on the upper side, have a conspicuous midrib, and droop in graceful curves. The first basal leaves are somewhat wider and not so glossy. Some of the side branches dropped from my plants during the summer, perhaps because of insufficient watering. If they had all remained, each plant might have had 600 or 700 flower heads, but I was content with 400. (One botanical description of this species, by the way, says, "Heads usually few!")

The plants are easily raised from seed during the summer and can be set out in their permanent quarters in the fall. A year later they will, I think, well repay the planter for his trouble. In a situation exposed to the wind the main stem should be tied to a stout stake when it is about 3 feet high; a 5-foot stake will be none too long by October.

The botanies give the habitat of this species as "low pine barrens" and "swamps." The two situations in which it has done so well for me are far from swampy, and the Arkansas form may be slightly different from the species as generally observed. It will apparently thrive in partial shade, but will do much better in full sunshine.

This species does not seem to be catalogued by the dealers, but I have saved enough seed to supply perhaps a dozen experimenters, and while they last will be glad to give some to any "garden neighbor" who will ask for them.—Bernard H. Lane, *Aurora Hills, Alexandria, Va.*

—We have reason to believe that this Sunflower is offered by one dealer at least (John L. Childs) under the name of Helianthus questifolius—evidently an orthographic error in copying a label at some time. We have been much attracted by the glory of its flowers in late fall (recalling the golden mist of Forsythia in spring) and enduring well into the period of frost.—Ed.

That Terrible Pest, The Mole

To the Editor of The Garden Magazine:

WILL some of the readers of The Open Column please tell me how to keep moles out of my garden? I have had a cement coping put around the bulb garden, ten inches below the ground, and four above—but the moles went under it, and have eaten most of the Tulips. Traps catch one now and then. Last fall I put out seven dozen fine Tulips in the flower garden—around this I had boards sunk below the surface, but the moles ate three dozen bulbs. They also burrow along both sides of the Sweet-peas, leaving holes. It seems to me all the people who raise so many Tulips must have some way of circumventing the moles. I hope they will help me.—Mrs. W. W. Applegate, *Coston, Calvert Co., Md.*

Eradicating Rot From Your Iris

To the Editor of The Garden Magazine:

SOMETIME ago a "neighbor" gave an account of her method of eradicating rot, which, briefly speaking, consisted in the entire destruction of every plant affected. While doubtless effectual, I do not think quite such radical methods required. In the summer of 1920 I discovered rot in a plant I had received from a well known nursery. It had only been in my border about two weeks when its sickly condition became apparent. I took it up, cut away every particle of the affected stock, and, as the root was small to begin with, I had less than two inches of root-stock left. This was rolled over and over in powdered sulphur till it was liberally coated. I then set it out on a ridge which borders a sloping bit of flower border where no moisture could possibly settle about it. Before fall there was a leaf growing thriftily and no more sign of rot. No other plant in my garden developed the disease. I think I would never destory an Iris for rot until I had faithfully tried the knife, sulphur, and removal to the driest bit of border at my command.—Amelia H. Botsford, *Edgemoor, Delaware.*

The Grapes in My Garden

To the Editor of The Garden Magazine:

I WAS much interested in the article on "Grapes Where You Live," in the October number of last year. One of my favorite Grapes is the Brighton which seems to be about the highest in quality of the dozen standard varieties on my place. This Grape must positively be planted near some other variety or it is sure to be a failure. It seems strange that in nine out of every ten nursery catalogues this fact is not mentioned. My vine has a Concord growing near it, and I train some of the canes of both varieties through each other. However, the Concord is not an ideal mate, as it blossoms slightly in advance of Brighton. Good results may be obtained by fertilizing some of the clusters by hand from some variety which blossoms at the same time. For a number of years I have received first prize at the York County Fair for the finest bunches of this most excellent Grape.

In this locality Brighton ripens about the last week in August and remains in good condition until about the first week in October, after that time it deteriorates rapidly. Bagging the bunches is necessary in

order to hold them that length of time, as they not only ripen more slowly, but are thus protected from the ravages of birds. Robins in particular seem to know a good thing when they see it, and go after this variety in preference to all others.—A. A. Knoch, *York, Pa.*

Native Plants for Landscape Use

To the Editor of The Garden Magazine:

POSSIBLY the following extract from a recently received letter may interest your readers, or at any rate those who care for our native plant material and believe in its wider use:

Looking over a copy of The Garden Magazine I was very much interested by your article on the Crataegus. Though I am now engaged in the forestry and lumber manufacturing industry in Florida, I was born in auld Scotia where the Hawthorn blooms in May; and one never loses one's first love completely! For more than twenty years I have pioneered in this lovely state as landscape gardener and consulting horticulturist and have continually insisted on the use of the native plants wherever possible. What a wealth of beauty and color we have here; though to many people it is only "Pine trees and gray Moss" and they are afraid of the little paths that lead to the wonder spots—afraid of the snakes that do not live here and the alligators that are now seen only in park fountains. There is a wonderful future for development along park and botanical garden lines in this part of the state, as we can grow almost all the tropical stuff safely, and much of the native flora is well worth preserving and developing for garden use.

Is not Mr. Allan's suggestion worth a serious thought or two? We are so prone to over-rate the exotic and under-rate the familiar.—John Dunbar, *Ass. Supt. of Parks, Rochester, N. Y.*

Carbide Gas for Greenfly

To the Editor of The Garden Magazine:

WHEN Rose bushes are badly infected with aphides there is no better way of getting rid of the trouble than by the employment of carbide gas. Small bags of muslin or any thin material are made. Into each of these a lump of the carbide used for cycle lamps is placed. One or more of the bags are tied on to the bushes. It is best to put these into place when a shower of rain is likely. As soon as the carbide is made damp the gas is generated and the aphides fall from the bushes in showers. Within the present writer's experience there is no better way of getting rid of greenfly. In one night fifty Rose bushes under observation were entirely cleared of the pest. If, at a later date, the aphides re-appear it is only needful to repeat the process.—S. Leonard Bastin, *Bournemouth, Eng.*

Hedges Clipped by Machinery

To the Editor of The Garden Magazine:

AN INTERESTING application of a gasoline engine to save labor on country estates and large suburban homes, was recently demonstrated by Waldemar Bilter, of St. Louis County, Missouri. The machine to which the motor was applied is designed to trim Privet hedges, of which there are a great number throughout the residential section of the county.

The device consists of a long frame, set upon adjustable legs, which fit over the hedge. The frame is leveled upon uneven ground by hand-wheels and cogs fitted to the legs. The motor is attached to a set of knives, working in a cutter-bar, resembling a small mowing machine. Considerable power is obtained through a series of reduction gears and the motor, taken from a two-cylinder motor cycle, operating at a speed of 1,500 R. P.M., drives the knives at 300 strokes a minute.

The motor was started and power was applied to the cutting mechanism by a clutch. As the knives began to cut the hedge the motor and trimming apparatus moved forward by a gear wheel meshing into a geared track. When it had reached the end of the track it was automatically thrown out of gear and the motor stopped. Then the machine was moved along and the operation was repeated until the top of the hedge was trimmed.

The machine was taken back to the starting point; the track was turned to the side of the hedge and the process was repeated. Then the further side of the hedge was trimmed, completing the task in three operations.

Mr. Bilter, with the aid of a boy 14 years old, trimmed the hedge which is 650 feet long, on all three sides, in three and a quarter hours.

The young inventor states that it requires two and a half days to trim the hedge by hand, using a set of hedge shears. The operation of the machine was declared to be a success by the few who witnessed the demonstration. Mr. Bilter has already started to build a more substantial machine for further demonstration and observation.—Frank E. Goodwin, *Kirkwood, Mo.*

BLUEBELL OR VIRGINIAN COWSLIP

Familiar through a wide range of territory the Bluebell (Mertensia virginica) lends itself readily to naturalistic planting wherever there is sufficient moisture

AN ILLINOIS GRAPE ARBOR

A pleasant vista from the living porch at Wisteria Lodge, home of Mr. L. H. Webb at Lombard, Ill. The yearly yield of grapes sometimes reaches a full ten bushels

Giant Himalaya Blackberry

To the Editor of The Garden Magazine:

WILL some one tell me just what to do with the Giant Himalaya Blackberry to make it bear its best and restrain its too vigorous growth? My plants are on their second season,—placed six feet apart on a six foot trellis of three wires. I have cut out the canes that bore a few inferior berries, sour and small, due no doubt to the drought. The new wood was cut off when it reached the top of the trellis to induce branching. It was a success; but now the branches, too, want to grow forever, and the shade is too great already with two more months of growing weather! Is it a desirable variety, and worth so much care?

I would like to know from some one who has successfuly raised it. We love blackberries and understood this to be a luscious variety, but in my country home it seems to grow so vigorous a plant.—W. T. A., *N. J.*

The Glory Pea as a House Plant

To the Editor of The Garden Magazine:

NO DOUBT the Glory-pea of Australia (Clianthus Dampieri), would be a more common sight in American greenhouses if its value as a basket plant were better known. This is really the only way to make it seem beautiful rather than curious. In order that its oddly shaped scarlet and black flowers may be revealed in their full richness against the grayish green foliage, the plant demands complete isolation, and this it gets in a basket. On the whole it is one of the handsomest basket plants I know of. As the normal height is only two feet, the overhang is not inconveniently long. The Glory-pea grows readily from seed. Treat it as an annual and, if possible, use seed ripened here rather than in Australia. Soak it in warm water before planting. The plants will blossom out of doors if given an early start, but this is seldom worth while. Nor is grafting for indoor use, despite the resultant vigorous growth and bloom. In the latter case the graft is made on Colutea arborescens, the stock being obtained by sowing seed of it three weeks in advance of the Glory-pea.—H. S. Adams, *New York.*

Perennial Window Boxes for Winter

To the Editor of The Garden Magazine:

WHY have window boxes that are things of beauty in summer, and such eyesores in winter that they must be removed to the tool house or cellar? Why not "perennial" window boxes?

By that is not meant, necessarily, boxes filled with perennial plants, but boxes that are perennially beautiful. The growths that charmed us in summer can be replaced by other beauties in winter, and the very variety will add spice to the enjoyment. The winter window box should contain evergreen backgrounds, with colorful foregrounds. The holly, the hemlock, the pine, the rhododendron, the laurel, and other evergreens will form the background. Some form of evergreen is to be had in any locality. For foregrounds Ornamental Grasses, Chinese Lanterns, Straw-flowers, Sea-lavender, Everlastings, or any other plants that retain their color when dry can be used to form charming effects.

There is one thing about the winter window box that makes it superior to the summer window box. Necessarily the summer box presents its best face to the passerby. The winter box may be the reverse, presenting to the person in the street only a uniform green appearance, though that in itself is lovely, while those within the house can look out at any scheme of beauty they choose to make in the box. Furthermore, growing things in summer for the winter window box will add zest to the gardening.—L. E. Theiss.

Triumphing Over the Foundation Soil

To the Editor of The Garden Magazine:

I WAS one of the few—whether fortunate or unfortunate ones I have not yet determined—who built a home during the war period. To escape the clutches of the rent profiteer I fled for refuge to another set of buccaneers doing business as lumber merchants, builders, etc. A detail of my experience with either set of these undesirable citizens would require too many swear words, besides the possibility of getting so eloquent in my exordium as to lose sight altogether of what I set in to write about.

One of my minor tribulations was that, in excavating for the cellar, my man spread the clay over the lot, without first removing the surface soil, as I had instructed him to do. It was out of the question to think of having a real garden in that stiff, inert mess of red clay. It would take two or three seasons of exposure to get the requisite vitality.

I then recalled an earlier experiment of mine in mixing just that kind of clay with sandy soil to promote the growth of Strawberries. The success of that effort was marked. The Gandy is, perhaps, the best known of the berry plants that do well in clay soil. But, would even the Gandy do any good in raw clay from the bottom of a cellar?

We moved into our new home in the fall, and just before winter set in I had the lot plowed as deeply as possible, to bring up some of the underneath soil to mix with the clay. Then a liberal coating of stable manure was applied over the whole, and in the spring the lot was plowed again and set to Gandy Strawberries. The result was a gratifying surprise. I have grown Strawberries for twenty years, but never saw anything in size, color, or flavor to surpass the berries that grew in that cellar clay. It should be remembered that the Gandy is a late variety, serving admirably to prolong the season.—Robert F. Bishop. *Westerville, Ohio.*

From "The White Violet Lady"

To the Editor of The Garden Magazine:

THE many friends of the White Violet nearly swamped me with requests for White Violet roots. Had it been a little earlier in the season I could have supplied them all, as they seed themselves all over my walks, but as I have cleaned and trimmed my walks of course I have destroyed the seedlings. I will be pleased, however, to send a few roots to as many of my correspondents as my supply will allow another spring and I hope I will be able to supply the roots to all who have requested them. I think it is Viola striata, native to most of our northern woods. It responds to cultivation and the flowers are larger than in its wild state; it has no fragrance and likes partial shade.—Mrs. Donald Smith, *Barre, Vt.*

Germination of Delphinium Seeds

To the Editor of The Garden Magazine:

BEING intensely interested in the tall Hybrid Delphiniums, I have faithfully purchased seed of the leading dealers and growers season after season for several years only to be almost invariably disappointed with the meager results of its germination. Seed of my own production was equally disappointing until two years ago. That season my own seed gave me a high percentage of germination and produced strong, vigorous plants, many of which bloomed the first season. Then I recalled that during the blooming season I had observed that a flock of humming birds, attracted by a nearby Honeysuckle, had been industriously working on the Delphiniums. Last season I again observed the humming bird and again I was rewarded with excellent seed, high germination, and rapidly growing plants. I pass the suggestion along for what it may prove to be worth.—Joe Smith, *Wash.*

Perennials That Bloom in Late Summer

To the Editor of The Garden Magazine:

I WISH some one would tell me what perennials will flower in late summer. In May and June my garden is a riot of bloom, Pyrethrum, Foxglove, Sweet William, Columbine, Canterbury-bells—all blazing away. Then comes July and August with the Phlox clumps and Sweet Alyssum, the only relics of June glories, the rest, dejected and blackened stems. Of course, later, the perennial Chrysanthemums will enliven things; but, is there anything which will keep the garden going all season with some show of bloom—except annuals which I do not want?—Mrs. H. R. Caraway, Carmel, N. Y.

—Some of the plants that bloom in August and later are: Hollyhock, Hardy Sunflower, Swamp-rose, Henry's Lily, Everlasting Pea, False Goat's-beard, False Chamomile, Larkspur, American Senna, Red Sneeze-weed, Giant Daisy, Yarrow, Monk's-hood, Cape Hyacinth, Sunflower, Tiger Lily, Meadow Sage, Meadow-sweet, Ox-eye, Gold-banded Lily, Knapweed, Shrubby Clematis, Purple Cone-flower, Japanese Lily, Rose Loosestrife, Blazing Star, Hardy Phlox, False Dragon's-head, White False Dragon's-head, Leopard's-bane, Bateman's Lily, Oswego Tea, Balloon-flower, White Balloon-flower, Red-hot-poker Plant, Chilian Lily, Turtle-head, Rosy Milfoil, Double Sneezewort, Golden Marguerite, Coreopsis, Blanket Flower, Cardinal Flower, Early Flowering Phlox, Speedwell, Mountain Bluet, St. John's Wort, Blue-bonnet, Great Sea-lavender, Dwarf Starwort, Stoke's Aster, Variegated Day-lily, Coral-bells, Poppy Mallow, Blue-bells of Scotland, Carpathian Hare-bell, White Carpathian Hare-bell, Forget-me-not, Tufted Pansy, English Daisy. September would bring in addition Boltonia, second bloom of Larkspur, the shrubby Asters, Japan Anemone, Mist-flower (Eupatorium coelestinum) and Iceland Poppy. Surely a rich selection. One reason why the late summer season is so often empty is that the plants to blossom then start so late in spring, that they are destroyed in the first spring "point-up" when ignorant labor is employed or some one unfamiliar with the habits or places of such plants; and another reason is overcrowding the border with plants for big effects earlier in the season; and for maximum results at all seasons a greenhouse is necessary to grow on stock in quantity.—Editor.

The Brand Peonies

Originated by O. F. Brand & Son
America's foremost hybridizers of the Peony

500,000 Peony Roots

We now have an immense stock of 500,000 roots of the very choicest Peonies grown.

Our Growing Methods

We have made it a practice ever since the growing of Peonies became a specialty with us, never to grow Peonies twice on the same location without a long period of years intervening. In this way we have avoided many of the difficulties and disappointments encountered by other growers who have grown their roots year after year on the same ground, and by doing so, we have kept the roots of our stock free from disease and have been enabled to send to our customers roots such as they write us "they have never received before."

We own at Faribault 200 acres of the very choicest nursery land. Land which in pioneer days was covered with some of the choicest hard wood timber in America. Land which when cleared grew wonderful crops of that wheat which has long since made the name "Minnesota" famous. Such soil is ideal nursery soil.

It is the possession of these *200 acres* of land which enables us to constantly shift our Peony beds, and this wonderful soil that permits us to send our customers roots of such unusual size.

Our Guarantee

We guarantee our Peonies absolutely true to name. That our stock is free from disease, except in the case of those varieties which are always diseased and which we advise our customers not to buy. And that the stock which we send out for size and constitutional vigor is unsurpassed.

Our Stock is handled by Experts

We are enabled to make this guarantee because our business is handled at every stage by experts. In the first place, the roots which you purchase from us are grown in *Ideal Peony Soil.* They are planted, cultivated, dug, and after being dug, handled by experienced help. From the instant a root leaves the ground until it is boxed and ready for shipment, it is in the hands of experienced labor. Many of our men have been with us for over twenty years. The father of my head Peony man in the field, worked for my father handling Peonies in the 'sixties.

All of these things taken together, with the fact that your Peonies from us are handled from the time they leave the ground, up to the time they leave for the transportation company *under cover, away from the air* in our immense Insulated Storage Building.

The Largest Storage Building in the World

devoted to the handling of Peonies, permits us to supply you with an article that cannot be surpassed.

Personal Inspection

And finally we are able to make this guarantee because Mr. Brand personally inspects every Peony order after it has been collected, and before it passes on to the boxers for boxing.

Such Peonies and Peonies so handled, are bound to please you.

We issue a beautiful catalogue covering the entire stock of Peonies we have for sale. This catalogue is yours for the asking if you are really interested in Peonies.

New 1921 Brand Peonies

David Harum An immense red of a distinct and very pleasing shade. Flower large, full, and beautifully formed. Guard petals prominent and well expanded. Stems tall, straight, strong. Foliage broad, light green and clean. A profuse and annual bloomer. A distinct flower of a very distinct shade of red. Extra fine strong divisions $25.00 each.

You can depend upon our judgment that **David Harum** is a good red. In the judgment of the American Peony Society, there are but 8 reds which rank 8.5 or better and of these 8 sorts 3 or 37½% are Brand varieties.

Mrs. Jennie R. Goudy A large flower with long, narrow bright, delicate pink petals, minutely flecked with red like Asa Gray, with heavy splashes of carmine on the edges of the central petals. Petals beautifully frilled and ruffled. *A Ruffled Peony.* Something entirely new in peonies. Magnificent, strong 1 year plants $25.00 each.

We are carrying this year the *largest stock of Brand Peonies in the world* and can supply roots in all sizes from divisions to 3 year clumps.

Besides the largest and most complete stock in the world of our own varieties for this fall's trade we feel that we now have to offer the largest stock in America of such Choice American, French and English sorts as Bayadere, Candeur, Cherry Hill, Clemenceau, Enchantrese, Exquisite, Jeannot, Jubilee, Kelway's Glorious, Kelway's Queen, Lady Duff, La Fee, La France, Laura Dessert, Le Cygne, Mary W. Shaylor, Loveliness, Mignon, Mme. Jules Dessert, Mrs. Edward Harding, Philippe Rivoire, Raone Dessert, etc., etc.

If you do not have our beautiful 1920-21 catalogue and are really interested in purchasing Peonies, send for it.

A. M. BRAND Lock Box 367 Faribault, Minn.

42 years a professional grower of Peonies

Send for this Booklet

If you are interested in owning your own greenhouse, but first want to know more about what you can get out of such a considerable investment, then send for The Tale of Chum Tom's Greenhouse.

It is a reprint of a most interesting article from one of the Country Life magazines.

Hitchings and Company

Home Office and Factory, Elizabeth, N. J.
101 Park Ave., New York 294 Washington St., Boston-9

Daffodils!

Of snowy white, or mellow gold, and blooming year after year, they are among the most charming flowers for lawn, for border, or among shrubs. Plant now—and generously!

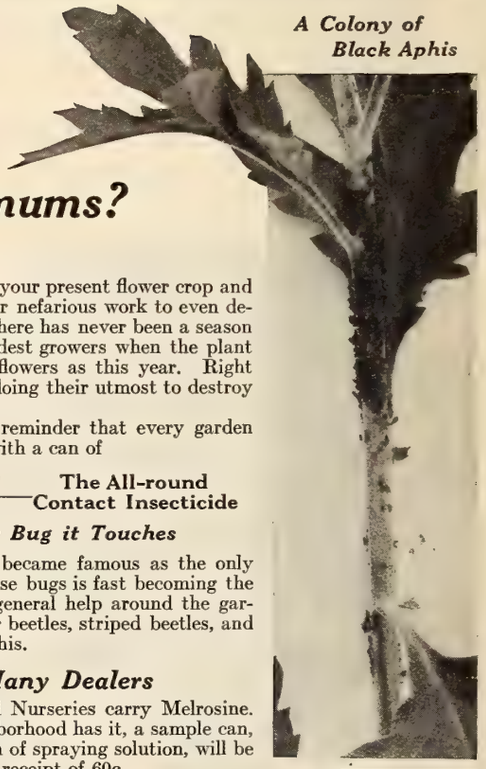
Collection of 100 Selected Bulbs, $3.00

or 40c per doz. A carefully selected assortment of large and medium trumpets, short cups, and Poeticus sorts. Delivered prepaid within 300 miles of New York. Beyond, add parcel post for 8-lb. pkg.

Schling's Bulbs

24 West 59th St., New York

Is THIS Happening To YOUR Chrysanthemums?



A Colony of Black Aphis

Are the Aphis reducing your present flower crop and are they carrying on their nefarious work to even destroy future pleasure? There has never been a season in the experience of the oldest growers when the plant lice so generally injured flowers as this year. Right now the black Aphis are doing their utmost to destroy the coming Fall pleasures.

All of which is but a reminder that every garden home should be fortified with a can of

MELROSINE—**The All-round Contact Insecticide**

Fatal to Every Bug it Touches

Melrosine, which first became famous as the only remedy that really kills rose bugs is fast becoming the standby everywhere as a general help around the garden. It kills black blister beetles, striped beetles, and sucessfully disposes of Aphis.

Sold by Many Dealers

Many Seed Firms and Nurseries carry Melrosine. If no dealer in your neighborhood has it, a sample can, enough to make one gallon of spraying solution, will be forwarded postpaid, upon receipt of 60c.

THE GARDEN CHEMICAL COMPANY
NEW YORK CITY, N.Y.

Peterson's Perfect Peonies

PEONY "Specialists" come and—go, but my Peonies continue to lead all others in quality and trueness as they have for the past seventeen years.

Monroe, N. Y., July 1, 1921.

"I have ordered peonies from you at different times during the last ten years, or over, and have always found your roots large, strong, and fresh, with big plump eyes. I have never lost a root, and above all, I believe every one has been true to name. I have received roots in the past from half a dozen other firms, but the roots I received last Fall from you were the finest I have ever seen, packed by one who knew how, and reached me in perfect condition. This Spring, although their first year, they all flowered, having blossoms much finer than I had any right to expect on plants not yet established."

ALFRED J. CRANE

If you felt more or less discouraged the past two Springs when viewing the damage wrought to plants of various kinds by the unprecedented weather, try the modern Peony. It is the Mark Tapley of flowering plants and will rejoice and triumph under the most trying conditions.

And, before ordering, send for a free copy of my special Peony catalogue for 1921 which this year illustrates such much-talked-of varieties as Le Cygne, Jubilee, Martha Bulloch, etc.

NOTE.—PEONIES MUST BE PLANTED IN THE FALL.

Mme. de Verneville

George H. Peterson *Rose and Peony Specialist* **Box 50, Fair Lawn, New Jersey**

We Grow PEONIES — Nothing Else

WHY WE LEAD

BECAUSE there are not 2,000,—nor 1,000,—nor 500 distinct varieties; but scarcely more than 100; and we have "spiked the guns" of the duplicates at high prices.

BECAUSE we do not send out a root until—regardless of its age—it has bloomed satisfactorily here the spring prior to its going to you. Some of the plants we deliver are three and four years old—with no advance in price.

BECAUSE our system of cultivation is unmatched in this country. Every root given individual and intensive culture,—as in a private garden. Ask those who have been here.

BECAUSE of the study of, and devotion to, the Peony alone, —an undivided allegiance. It's significant.

Your GARDEN is not complete without PEONIES.

The CEMETERY lot should have them.

It is easy to select from our 90 choice varieties—limited in number and supreme in color, form, fragrance and vigor.

"OUR REPUTATION HAS BEEN BUILT ON THE QUALITY OF OUR STOCK"

Distinctive catalogue will be ready August first—
Send for it NOW.

Mohican Peony Gardens, BOX 300 **Sinking Spring, Penn'a.**

BECKERT'S TULIPS

BECKERT'S TULIPS is more than a phrase—it implies a guarantee of quality; an expert knowledge of production, and a wide acquaintance with reputable growers—it means "The Finest Tulips."

Few spring effects are so cheery and heartening as a border of Tulips—or beds of Daffodils. Their warm colors radiate the spirit of sunshine and gladness as do no other flowers the whole year through.

Now is the Time to Plan For Next Spring's Display

To ensure that highest measure of effect that comes with harmony of color, height and season of bloom, the bulbs you plant this fall must be carefully selected and uniformly well-grown. Our forty-odd years of experience and our close association with the Holland growers enable us to offer you the finest bulbs that Holland produces—bulbs that are sure to live up to your expectations.

Beckert's 1921 Bulb Catalogue contains much of interest to every gardener and home owner. You'll find in it not only descriptions and prices, but hints and suggestions that you'll be glad to have. Write for a copy to-day.

BECKERT'S SEED STORE

Importers and Growers of Quality Seeds and Bulbs

101-103 Federal St., Dept. G, Pittsburgh, Penna.

IMP Soap Spray is a scientifically prepared compound that is destructive to insects without injuring plants or roots. Does not spot leaves, fruit, grass or deface paint work. May be used on fruit trees; shade trees; flowering shrubs; vines; garden truck; and on all sorts of plants, both under glass and out of doors.

It is most effective against rose bug; mill bug; white, black, green and rhododendron fly; red spider; thrips; aphis; fruit pests; elm leaf beetle and moths. Very economical, one gallon is mixed with 25 to 40 gallons of water. Full directions on each can. Order direct if your dealer cannot supply.

Pint can	$ .50
Quart can	.75
Gallon can	2.25
5 Gallon can	10.00
10 " "	18.00

F. E. ATTEAUX & CO., Inc.
176 Purchase St.
BOSTON MASS.

3106

The Garry-nee-Dule Strain

White Delphiniums

For several years Wm. Toole, Sr., has been developing a strain of White Hybrid Delphiniums. The first start was made from a chance white seedling of D. Formosum which was crossed with the best Hybrids. The result is some very attractive Hybrids ranging from creamy to pure white. Selected two year old plants, 50c each, $5.00 per dozen. Seeds, 50c per pkt. of 100 seeds.

Please ask for our illustrated Catalogue "Hardy Plants for the Home Garden." Not as large as some other lists but interesting enough to deserve your attention. Gladly mailed free. Let's get acquainted.

W. A. TOOLE, *Garry-nee-Dule* **Baraboo, Wis.**

Rare and Beautiful Wild Flowers

(*Bulbs and Dormant Roots*)

Mertensia, or Virginia Cowslip—pink, changing to azure blue.
Dodecatheon, or Shooting Star—pink, Cyclamen-like flowers.
Trillium, or Wake Robin—white, red and pink, one kind fragrant,

From the Far West

Calochortus, The exquisite Mariposa, or Butterfly, Tulips, in variety.
Erythronium, Trout Lily, or Dog Tooth Violet, in yellows, whites, pinks and purples.
Lewisia, or Bitter Root—the charming, satiny-pink, State Flower of Montana.

These bulbs and roots should be planted during September and October. They are spring bloomers, perfectly hardy and, with many other scarce and lovely things, are fully described and priced in my descriptive list which also gives simple cultural directions that will insure success. Write for it **To-day,** or call at my office and make your selections.

Herbert Durand, *Wild Garden Specialist*
286 Fifth Avenue (near 30th St.), **New York City**

If you are Interested

We have just received from the press our new catalogue fully describing nearly 300 of the choicest varieties of peonies. May we send you a copy? You should have this before ordering your peonies this fall. Kindly send us your name and address and copy will go forward by first mail.

FRANKLIN NURSERY
(Richfield Station) Minneapolis, Minn.

Peonies and Iris

12 Varieties Peonies.... $5.00
25 Varieties Irises..... $2.50

While the prices make it necessary that all possible labor, etc., be eliminated and the plants will not be labeled, they are all named varieties; cover entire range of shades and blooming season. If purchased singly would cost about three times.

To those who are interested in named varieties and desire to "browse" through the list comprising 188 of the better varieties of peonies and 206 irises, we are pleased to send our illustrated, descriptive booklet on request.

Clarence W. Hubbard
GROWER OF
PEONIES & IRISES

6144 Lakewood Ave. **Chicago, Ill.**

EVERGREENS

TREES and shrubs—all varieties—all sizes—for all purposes—whether for beautification or service, such as yard-screens, hedges, windbreaks, etc.

September is the ideal time to transplant Evergreens. And when you make selection from "Framingham" stock—so carefully nurtured, famously hardy, faultlessly delivered—you are sure of getting the *best there is,* regardless of what you choose;—the preferred choice of connoisseurs.

Send for our handsome free Book "Beautiful Home Surroundings"

WYMAN'S
Framingham Nurseries
FRAMINGHAM, MASSACHUSETTS

Wake Robins and Trout Lilies
Blue Bells and Shooting Stars
Hepaticas and Bloodroots

THESE are only a few of the lovely native wild flowers you can enjoy on your own place in Early Spring—*Next Spring*—if you plant them this Fall.

There are hundreds of American plants, with flowers of exquisite beauty—all easy to establish, all perfectly hardy. Their requirements as to soil and position are simple, and once properly planted they need no after care.

My Unusual Catalogue If you are fond of Wild Flowers and Ferns, (and who is Not) you will be intensely interested in my catalogue, which will introduce to you unsuspected treasures of woodland, meadow, and bog, and tell you where and how you can grow them successfully. Send for your copy to-day.

Gillett Service My Service Department is ready and anxious to help you. Don't hesitate to write and ask questions. You can have expert advice on any kind of gardening for which Native Shrubs, Evergreens, Ferns and Flowers are suitable. This includes Woodland plantings, Wild Flower Sanctuaries, Rock Gardens, Bog Gardens, Water Gardens. Plans made and plantings laid out at moderate cost, for suburban and rural properties of all sizes, up to the largest estates.

EDWARD GILLETT, *Fern and Flower Farm*
3 Main St., Southwick, Mass.

HERBERT DURAND
Representative
286 Fifth Avenue
New York City

A Final Plea for MORE Peonies and Irises

YOU simply CAN NOT plant *too many* Peonies and Irises this month and next! They are the flower you'll always welcome every June and I'll gladly help you get started or suggest additions. Please let my little catalogue help—it's yours for the asking.

To induce you to become interested in making our country one vast Flower Garden I will send

12 Iris worth $4.00 for $3.00

Dr. Bernice, Florentina, Halfdan, Ingeborg, Loreley, Mme. Chereau, Mrs. Neubronner, Queen of May, Sherwin Wright, Rhein Nixe, Walneriana, Walhalla.

Iris in choice mixture, $1.00 per 12; $5.00 per 100; $45.00 per 1000

12 Peonies worth $7.25 for $5.00

Boule de Neige, Canari, Couronne d'Or, Delachei, Duchess de Nemours, Edulis Superba, Felix Crousse, Festiva Maxima, Marie Stuart, Mme. de Galhau, Mireille, Nigricans.

7 Peonies worth $17.50—every one a gem—for $15.00

Archie Brand, Augustin d'Hour, Baroness Schroeder, Chestine Gowdy, Karl Rosenfield, Mme. Ducel, Marguerite Gerard.

Peonies in Mixture $2.50 per doz., $15.00 per 100

Once more, kindly remember me as an Iris, Peony and Phlox Specialist and let me mail you my concise booklet.

GEORGE N. SMITH, **Wellesley Hills, 82, Mass.**

Did You Miss the Treat "Last Month"?

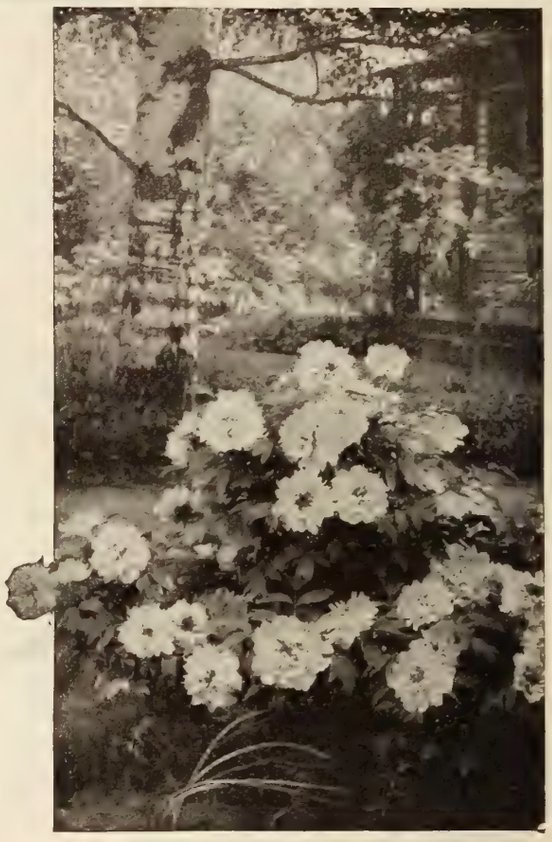
¶ It may justly be considered selfish when a man considers a book he writes a treat to others. Hence, it is only due Henry S. Cooper, Peony Fan of Kenosha, Wis., that the suggestion concerning his book in last month's advertisement did *not* come from Mr. Cooper himself.

¶ The writer of this advertisement has before him a score of unsolicited testimonials embracing the country from Maine to California and from Canada to the Gulf, every one of them being outspoken in admiration for Mr. Cooper's "Tips and Pointers for Beginners with Peonies." Few pieces of advertising literature have made such a remarkable "hit" as this splendid, and yet dignified, but modest book on Peonies.

¶ This is the month to plant Peonies. Mr. Cooper's book is intended to help beginners. It tells how to plant and what to plant for specific results. It gives unbiased opinions on Peonies from a man who admires them all, grows many, and is enough of a business man to play no favorites. Such a book cannot help but find appreciation, even on the part of a connoisseur of Peonies.

¶ There are still a few copies of this book, which, upon the adv. man's suggestion, Mr. Cooper is reserving especially for readers of the Garden Magazine. I am sure he will be glad to send you a copy if you apply promptly and mention where you saw this adv.

Address: HENRY S. COOPER, Peony Fan, Kenosha, Wis.



USUALLY BEARS FIRST YEAR PLANTED

Always the Second Year—Breaks Records the Third Year

Do you ask stronger evidence, read this:

403 Perfect peaches on 4 year old tree.

Mr. C. E. Strawbridge, of Lima, Ohio, writes us under date of August 25, 1920, as follows: "On April 10, 1916, I set out one of your new Rochester Peach trees. Last year we picked 5 peaches from it, each averaging the size of an average tea cup. THIS YEAR WE HAVE PICKED EXACTLY 403 LARGE PEACHES FROM THIS ONE TREE. Many people have seen this tree, and can hardly believe their own eyes. One of its admirers was Postmaster J. E. Sullivan, who wants me to put him in touch with the "FELLOWS WHO HAVE SUCH TREES FOR SALE."

TREES planted in Spring, 1918, bore 150 to 200 peaches past summer.

THE EARLIEST YELLOW FREESTONE PEACH KNOWN

"Rochester is greatest money making peach in the world"—Statement by large orchardist.

Originated in Rochester, New York, tree is a strong, upright grower, **has stood sixteen degrees below zero and produced a full crop,** while the Elberta and Crawford, under the same conditions in the same orchard, produced no blossoms and consequently no fruit.

Mr. Yarker, Greece, N. Y., who has an orchard of 500 trees, reports 17 peaches picked in August from a tree planted the previous spring.

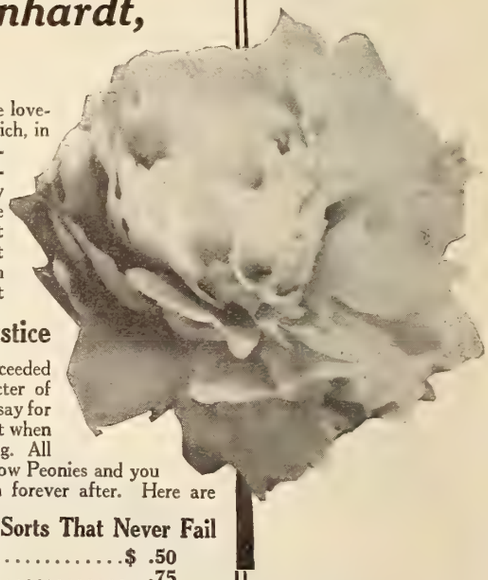
Mr. C. M. Thomas, 215 W. 40th St., Savannah, Ga., purchased a Rochester Peach from us last February and picked the first fruit in July.

Catalogue—For descriptions and prices of a complete list of Glenwood products send for a copy of our 1921 catalogue of dependable Trees and Plants—it's free.

☞ *We are headquarters for genuine Rochester Peach*

GLEN BROS., Inc., Glenwood Nursery, Established 1866
Rochester, N. Y.

This is the "divine" Sarah Bernhardt, BUT—



It does not portray half the loveliness of this real Peony which, in color, shape and general character ranks among the loveliest of our Peonies. For forty years I have followed the lure of the Peony. During that time I have literally tried out and studied thousands. In every case I have found that

Pictures Don't Do Justice

since no artist has ever succeeded in capturing the real character of the flowers. The same I can say for the printed word. It falls flat when compared with the real thing. All I can suggest is, start to grow Peonies and you can not help but love them forever after. Here are

A Few Popular Prized Sorts That Never Fail

Festiva Maxima	$ .50
Berlioz	.75
Baroness Schroeder	1.00
M. Jules Elie	1.00
Mad. Calot	.75
Eugenie Verdier	1.00

A Catalogue describing hundreds of fine PEONIES is gladly sent free on request.

May I send you a copy of my free catalogue which will introduce to you a choice of five hundred of the finest in Peonydom?

W. L. GUMM, *Peony Specialists* **Remington, Ind.**

September Garden Helps

Beds of perennials will be greatly benefited by fertilizing now—and next year will be decidedly better because of this treatment. Now is a good time to set out perennials.

Now is the best time to plant evergreens, and a few Stim-U-planT tablets used at the same time give excellent results. The tablets are made by the Earp-Thomas Cultures Corporation, 80 Lafayette street, New York. One hundred tablets are delivered for seventy-five cents; a thousand for three dollars and a half.

This is the season for planting peonies and iris, and these little tablets should be set along the rows or around the plants.

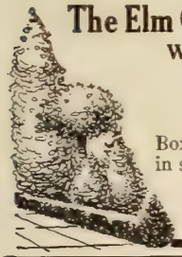
In planting tulips, hyacinths, and other fall bulbs, after the bulbs are covered, insert a tablet every six inches along the row or six inches apart each way in beds, as the bulbs flower early, before fertilizer can be taken advantage of in the spring.

If your seed dealer does not have Stim-U-planT, order direct from the manufacturer.

New dwarf hardy low border

Box-Barberry

Originated and Introduced by



The Elm City Nursery Company

Woodmont Nurseries, Inc.
P. O. Box 191
New Haven, Conn.

Box-Barberry can be safely planted in spring or fall.

Send for special Box-Barberry folder and general nursery catalogue.

Fryer's Hardy Perennials

FOR FALL PLANTING

Delphiniums—Manorville Hybrids. Two year No. 1 roots. Large two-year, No. 1 roots, each 25c. doz. $2.50.

Peonies—All of the standard varieties in strong, healthy roots that will bloom next season.

Irises—My specialty. Send for Special Iris Literature. September is a good time to plant.

Phloxes—A wide range of tall, medium and dwarf varieties in all the brilliant colors. General catalogue gives complete descriptions.

Send for Catalogue

We want you to know more about Fryer's Hardy Plants. Our stocks are extensive and grown under conditions that have thoroughly proved their hardiness.

WILLIS E. FRYER
Mantorville, Minnesota

Sunshine Filled Daffodils

Plant Now These Permanent Joy Givers

Plant these sunshine filled "Dilly-down-daffies" this fall.
Plant these big double-nosed bulbs that are filled with bounteous bloom promise for next spring.
Plant them this fall and they will go on thriving and multiplying year after year with no special care.
Plant them along the foundation under your windows and have drifts of sunshine.
Plant them along your walks, in front of your shrubbery and mingled with your low evergreens. For so small an expenditure and so little trouble, what can compare with them? Below are ten choice varieties, priced in lots of 10 or 100. Also special collections of the 10 at specially attractive prices. Kindly add ten per cent. to all prices if you want shipped by parcel post.

	10	100
Emperor. One of the finest trumpet Daffodils. Deep rich yellow. Mammoth Mother Bulbs	.90	7.50
Empress. A large bicolor trumpet variety. White perianth, deep yellow trumpet. Double Nosed Bulbs.	.90	7.50
Golden Spur. A popular trumpet variety for outdoors or early forcing. Entire flower is deep golden yellow. Double Nosed Bulbs	.90	7.50
Barrii conspicuus. Large single variety. Perianth soft yellow, cup yellow with bright scarlet edge	.65	5.00
Incomparabilis Sir Watkin. (Giant Welsh Daffodil). Very large flowers. Primrose perianth with golden crown, tinged orange scarlet. Double Nosed Bulbs.	.90	7.50
Leedsi White Lady. A dainty and beautiful flower with broad white perianth and pale yellow cup	.85	7.00
Poeticus (Pheasants Eye). The well known and popular Poets' Narcissus. Petals are pure white, cup deep orange red	.50	3.50
Poeticus Ornatus. Blooms earlier than the above and forces well	.55	4.00
Silver or Sulphur Phoenix. (Codlins and Cream). Large flower of double white with a sulphur center	.70	5.50
Van Sion. (Double Yellow Daffodil). Strikingly beautiful large double yellow flowers. Fine for forcing.	.90	7.50

Special Collections of the above 10 Daffodils

One of each (10 bulbs) .80 — Ten of each (100 bulbs) 6.00
Five " " (50 ") 3.50 — 25 " " (250 ") 14.00

OUR FALL TEN TEN BOOK IS READY. SEND FOR YOUR COPY.

Julius Roehrs Co
At The Sign of The Tree
Box 10, Rutherford N.J.

Moss Aztec Pottery

Offers a wide choice of objects, from simple fern dishes and bud vases to impressive jardinieres and plant stands. Its predominating characteristic is refined elegance in designs and colors. A post card request will bring you the "Moss Aztec" catalogue and name of nearest dealer.

ZANE POTTERY COMPANY
So. Zanesville, O.

Ye Olde Fashioned Hardy Plants

Start that Hardy Perennial Garden NOW!

Hollyhocks	Sweet Williams
Dianthus (Hardy Pinks)	Achillea (The Pearl)
Delphinium (Hardy Larkspur)	Digitalis (Foxglove)
Pyrethrum or Painted Daisy	Centurea (Cornflower)
Coreopsis, Harvest Moon	Chrysanthemum (Shasta Daisy)

25 cents each, $2.50 a doz.

Our Special Offer, 1 of each of the above	(10) plants	- $ 2.00
Our Special Offer, 3 " " " " "	(30) "	- 5.50
Our Special Offer, 6 " " " " "	(60) "	- 10.00
Our Special Offer, 12 " " " " "	(120) "	- 19.00

We also have many other varieties of Hardy Perennials. All above ready for immediate shipment. Catalogues exhausted, but complete list on request.

CLINTON NURSERIES **Clinton, Conn.**

You May Enjoy These Glorious Darwins

For brilliant shades in your May garden, no flower can rival the magnificent Darwin tulip. We have made a specialty of them for years and the foremost growers in Holland send us as fine a grade of choice bulbs in the best varieties as can be secured anywhere.

A Selection of Choice Sorts at Moderate Cost

Here is a collection bound to please the most exacting. Plant these now, for a greater tulip show next May.

Clara Butt—Apple blossom. Forces well; extra fine.
Europe—Fiery salmon-scarlet, white center.
Glow—Fiery scarlet, blue and white center.
King Harold—Deep maroon-scarlet, almost black.
Isis—Fiery crimson-scarlet. Brilliant.
Rev. Ewbank—Heliotrope, bordered light-blue.
Massachusetts—Soft rose, tinted purple, edges and inside pink with white base. Extra.
The Sultan—Rich velvety-black.
White Queen—The only white Darwin. It opens rosy-white, but passes to pure white.
La Tristesse—Blue Violet.
Mattia—Brilliant rosy-red shaded lilac; blue base. A wonderful Tulip of beautiful shape and color. Highly recommendable for outdoor planting.

Special Offer: One each of above eleven superb kinds will be mailed for 85c; 3 of each, 33 bulbs in all, for $2.50 postpaid.

Fall Catalogue Free

Besides tulips you should plant Daffodils, Hyacinths, Hardy Perennials, such as Peonies and Irises, and quite a variety of hardy plant material this month and next. Let our Fall catalogue be a guide to your next Spring garden of flowers.

John Lewis Childs, Inc., Floral Park, N. Y.

"LILIUM REGALE"

HORSFORD'S HARDY LILIES

And *Cold Weather* Plants

This new Regal Lily is the finest novelty that has been offered in years. Our Hardy Perennials, Wild Flowers, Iris, Peonies, Hardy Ferns, Vines, Shrubs, and Trees which we grow here have always given satisfaction when properly set. Trees and Shrubs that we have found tender in severe winters have been discarded from our lists. Ask for our Autumn Supplement and Fall Price List before making up your list of wants.

F. H. HORSFORD
CHARLOTTE VERMONT

THE BOSTON PEONY SHOW

Did You See It?

Have You Heard About the Winners?

My Boston Peony Show Booklet will tell you all about the show and the prize winners.

I send out my Peony Show booklet free and I include my Peony price list.

LEE R. BONNEWITZ
Washington St. Van Wert, Ohio

For Autumn Planting

Rhododendron Maximum. In car lot.
Rhododendron Catawbiense. In car lot.
Rhododendron Carolinianum. In car lot.
Kalmia Latifolia. In car lot.
Fruit Trees and Fruit Plants.
Ornamental Trees and Shrubs.
Pot-grown Strawberry Plants. The latter for shipment between July 15th and Oct. 1st.

Send list of wants for price

THE MORRIS NURSERY CO.
1133 Broadway, New York, N. Y.

Gardening, Farming and Poultry Husbandry
the new profession for Women
SCHOOL OF HORTICULTURE, Ambler, Penn.
situated in beautiful open country, 18 miles from Philadelphia. Two year Diploma Course entrance September 13, 1921, and January 17, 1922. Thorough training in theory and practice. Unusual positions obtainable upon Graduation. August Course in Gardening. Circulars.
ELIZABETH LEIGHTON LEE, Director

FOR SALE
30 BAY TREES in tubs
30 by 28 inches. Specimen trees both Standard and Pyramid. For particulars address
H. H. MILLER, Peapack, New Jersey

PEONIES

Send for our trial offer of six choice named varieties, all large roots

for $2.50

They will please you.
Price list describing 50 standard varieties of Peonies and 60 choice Iris sent upon request.

Iris Wholesale also at Attractive Prices

Hoffman Peony Gardens
Hudson, Ohio

CONARD STAR ROSES BLOOM or your money back

A GARDEN of glorious roses positively assured if you have Conard Star Roses. Each guaranteed to bloom or your money back.

Each a sturdy field-grown plant from rose specialists of over 50 years' experience.

Each permanently identified by the name of the rose on our printed celluloid star tag which you leave on the plant. This tag is also our symbol of guarantee.

Write for illustrated catalogue of roses for fall planting. It's free.

CONARD ★ ROSES
& JONES COMPANY
BOX 24 WEST GROVE, PA.
Robt. Pyle, *Pres.* A. Wintzer, *Vice Pres.*
Backed by over 50 years' experience

"No library complete without Kipling complete"

BERRY AND FLOWER PLANTS
For September and Fall planting. STRAWBERRY PLANTS, pot-grown and runner—will bear fruit next summer. RASPBERRY, BLACKBERRY, GOOSEBERRY, CURRANT, GRAPE, ASPARAGUS, RHUBARB plants; DELPHINIUM, HOLLYHOCK, ANCHUSA, HIBISCUS, SWEET WILLIAM, GYPSOPHILA, COLUMBINE, POPPY and other Hardy Perennial Flower plants; ROSES, SHRUBS. Catalogue free.
HARRY A. SQUIRES, Good Ground, N. Y.

Movilla Peonies

Awarded Gold and Silver Medals by
American Peony Society
New York — Philadelphia — Reading
1916 1917 1920

¶ We give our entire time and attention to cultivating the *best*.

¶ We waste no effort or expense growing inferior varieties.

¶ We have all the newest and best American and European Introductions.

¶ Send 30 cents for descriptive catalogue with symposium ratings or send a postal card for free price list.

Movilla Gardens
Haverford, Pa.

Is Your Home Built on the Sands?

HAS IT a sub-soil like glass marbles and glass door knobs with a few inches of sandy loam top-soil? Is it on the borders of the pine barrens of Long Island or New Jersey? Did the building operations leave sand from the cellar where you want a group of trees? Do your friends tell you you cannot grow anything until you bring in so many inches of top soil at so much per cubic yard? Do you begin to think, "it is all right to live in the country if you are rich"? We have the plants that will make your place smile. Look on the nearest sand heap. Nature plants Birch, Bayberry, Golden Rod or Grass. The first plant holds some passing leaves. The squirrel plants an acorn for winter and forgets it. Perhaps the wind blows a seed of Pitch Pine or a Robin drops a Cedar berry. You can do what Nature would do, but do it first. You can plant trees 1′ high or 10 years old. You can mulch them down with leaves, salt hay or sea weed.

How do you go at this? The best way is to make a sketch or prepare a series of photographs looking in various directions on your place, also make a plan to scale, bring it to the nursery.

Where you want a tall tree label some Pitch Pine. They will be dug with a big ball of earth that assures successful growth of a tree considered difficult to transplant.

Do you want a shady grove of trees that fit your sand? It may be the Black and Scarlet Oaks. These you can label feeling sure they will always look well fed and happy, not wilt like a poplar dropping its leaves in mid-summer.

Do you want sweeps of color during the season? Tell us what colors you want and we will tell you what Nature will let you have? Do you want a grove for yourself and the birds, something for every month in the year? Tell us where you are and we will tell you what Nature grew for the Indians and early settlers. As you pick blackberries do your friends boast of their Bartlett pears and do you wish you had some? We have grown some apple and pears 6 years old rather than 2 years old so they will save you time. September is the time to pick them out and plant them. Don't wait until the frost kills the leaves but start early for the trees will make a quicker get-away next spring.

HICKS NURSERIES, Dept. M., Westbury, Long Island, N. Y.

HICKS QUESTIONNAIRE

THE ROMANCE OF OUR TREES *by* Ernest H. Wilson, M. A., V. M. H.
For tree lovers and book lovers both. Limited edition. Illustrated. Net $10.00

IRISES

New Price List will be out of Press Aug. 1st.
Mailed free to all applicants.
HENRY C. ECKERT, Belleville, Ill.

PEONIES

Solange, Therese, Rosa Bonheur, Madam Jules Dessert, $6.75 each. Le Cygne, Martha Bullock $25.00 each.

All above in *one year plants*. Also many other fine varieties, of Peonies, Iris, and Phlox.

M. J. PERKINS & CO. Danvers, Massachusetts

GREEN'S
TREES AND PLANTS

Everything for Garden and Orchard

SYRACUSE, the best red raspberry grown to-day, CACO, a wonderful, large red grape. HONEYSWEET, a new black-cap raspberry and ROCHESTER peach, are fine producers.

Trees True to Name. Apple, peach, pear, cherry, nut and shade trees. Strawberry plants, raspberry, blackberry, gooseberry and currant bushes, vines, shrubs, roses and ornamentals. Best varieties. 40 years' producing better plants. Buy direct. Save money.

Our illustrated catalogue free

GREEN'S NURSERY CO., Box 7, Rochester, N.Y.

Dwarf Evergreens

THE planting of Dwarf Evergreens may prove to be just the one finishing touch needed to give charm to a home that otherwise will seem bare and "box-like." Some foundation plantings become overgrown and unsightly because the wrong plants have been chosen. The Dwarf Evergreens offered below minimize this danger. Moreover, they provide cheer and beauty, and a warm welcome, even during the winter months. Properly grouped about the house, they add a rich distinction and inviting hospitality to the impression of the home on the passerby and on your guests.

For the effect shown in the photograph, we suggest: Pfitzer's Juniper, 1½ to 2 feet: Dwarf Japanese Yew, 1¼ to 1½ feet; Gregory Dwarf Spruce, 1¼ to 1½ by 1½ to 2 foot spread; White-leaved Retinospora, 1¼ to 1½ feet; Mugho Pine, 1 to 1¼ by 1¼ to 1½ foot spread; Spreading English Yew, 15 to 18 inches spread; and Azalea Amoena, 1 to 1¼ feet. This group of 7 evergreens will be supplied for $20.00.

Ask for our free book "On Beautifying the Home Grounds."

Moons' Nurseries

THE WM. H. MOON CO.

MORRISVILLE (which is one mile from Trenton, N. J.) PENNSYLVANIA

PEONIES
that will win Your Heart!

After growing hundreds of superior varieties of Peonies, I have selected 30 that I consider supreme after 25 years' experience. They are all finished masterpieces, regardless of price.

A view in my Peony Garden

Grow These for Greatest Pleasure

White—		***Pink—***	
Alsace Lorraine	**$ 3.50**	**Mons. Jules Elie**	**$ 1.00**
Le Cygne	**20.00**	**Martha Bullock**	**25.00**
Frances Willard	**10.00**	**Sarah Bernhardt**	**4.00**
Festiva Maxima	**1.00**	**Walter Faxon**	**10.00**
Kelway's Glorious	**35.00**	**Mme. Jules Dessert**	**8.00**
Mary W. Shaylor	**40.00**	**Loveliness**	**7.50**
Jubilee	**15.00**	**Therese**	**6.00**
Henry Avery	**10.00**	**Phyllis Kelway**	**15.00**
Blush Pink—		***Red—***	
Solange	**10.00**	**Longfellow**	**10.00**
Tourangelle	**7.50**	**Eugene Bigot**	**2.00**
Opal	**10.00**	**Mary Brand**	**7.50**
President Taft	**3.00**	**Karl Rosenfield**	**3.00**
Elwood Pleas.	**6.00**	**Grover Cleveland**	**2.00**
Luetta Pfeiffer	**25.00**	**Mons. Martin Cahuzac**	**4.00**
Lady Alexander Duff	**10.00**	**Wm. F. Turner**	**5.00**

Please Order Direct from This Advertisement

It is too late to send a catalogue, so shall be pleased to have you order from above list. Satisfaction guaranteed. Plant this month.

Mrs. Wm. Crawford, Grower of fine Peonies and Irises **La Porte, Indiana**

Naturalize Daffodils
this Autumn

Try a "nature" planting—a spot where the blooms will seem to have grown forever. So long as the irregular spacing of nature is simulated, almost any location answers the purpose. Along a brook, or at the edge of a woods or tall grasses, Daffodils will seem most at home.

Golden Spur is a rich golden yellow throughout. *Empress* has a large yellow trumpet, and a pure white perianth. Both of these are well adapted to natural plantings. Largest size bulbs, $1.25 per dozen, $7.50 per hundred, postpaid.

Our Fall Catalogue gives true descriptions of many Daffodils, together with hosts of Tulips and Hyacinths more adapted to formal plantings. You'll find it a pleasure to plan new garden features with the aid of this book. Tell us you'd like to have catalogue G, and we'll mail a copy immediately.

Wm. M. Hunt & Co., Inc.
148 Chambers Street, New York City

A Garden for Every Home

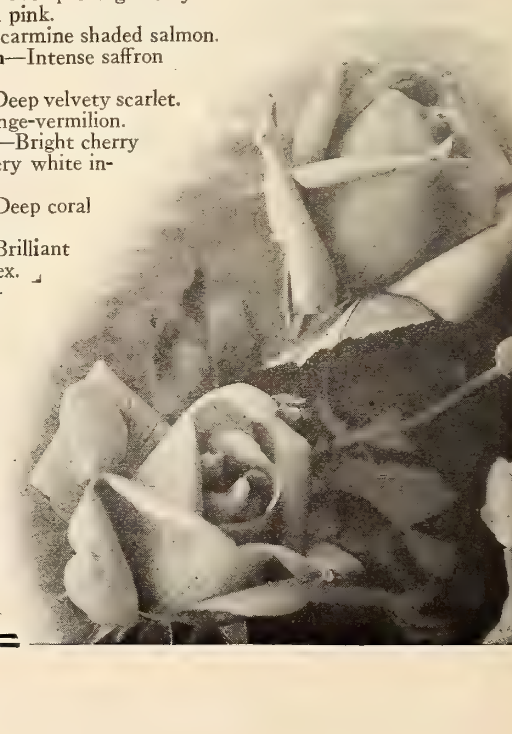
American Grown Roses

FOR AMERICAN GARDENS FOR FALL AND SPRING PLANTING

Strong Field-Grown 2-year-old budded plants

Collection of ten following varieties, one plant of each, $9.00

1. **Betty**—Copper rose, overspread go'den yellow.
2. **Columbia**—Beautiful pink.
3. **Dean Hole**—Silvery carmine shaded salmon.
4. **Duchess of Wellington**—Intense saffron yellow.
5. **General McArthur**—Deep velvety scarlet.
6. **Geo. C. Waud**—Orange-vermilion.
7. **Jonkherr J. L. Mock**—Bright cherry red on outside silvery white inside of petals.
8. **Lady Alice Stanley**—Deep coral rose.
9. **Miss Cynthia Ford**—Brilliant rose-pink, light reflex.
10. **Mme. Jules Bouche**—White.



Special Rose List

conta'ning all the best and latest varieties sent on request.

Muller-Sealey Company, Inc.

145 West 45th St., N. Y.

Bobbink & Atkins

Visit Nursery

Ask for Catalog

Iris **Roses** **Peonies**

Japanese Yew

The Hedge Plant of the Future

The hardiest and greenest of all evergreens. It will grow everywhere. It is most attractive for lawn specimens. Ask for pamphlet describing it, with sizes and prices.

Ask for special lists of Hardy Plants in Pots, Pot-Grown Vines and Climbers, Peonies and Iris, Pot-Grown Strawberries and Rock Garden Plants.

Nurserymen and Florists

Rutherford **New Jersey**

Callahan SECTIONAL GREEN HOUSES

Pay Dividends Every Day

SUMMER gardens reduce living costs considerably. Winter gardens bring greater savings. An underglass garden will soon pay for itself by supplying your table with fresh things all winter. Then your favorite flowers will bring cheer to your home the year round. Artistic Callahan Sectional Greenhouses are built in sizes for suburban homes and city residences.

Built in completely finished unit sections, which permit of quantity production, they are furnished at surprisingly low costs. Erection costs are eliminated because anyone can quickly and easily bolt the sections together — only a wrench and screwdriver needed.

Even though you garden as a spare time diversion, you may be sure of a successful garden. Scientific design and careful construction give ideal growing conditions. All wood parts are Red Cypress and roof supports are pipe purlins.

The Greenhouse Book will interest you. Write for it to-day.

T. J. CALLAHAN COMPANY, 29 S. Canal St., Dayton, O.

We also make Duo-Glazed Sash for Hotbeds and Cut-to-Fit greenhouse material

Milady's Bulb Garden

A Complete Collection for Indoors or Outdoors

The following collections of bulbs are made to introduce ourselves to Garden Magazine readers. Our stocks of Hyacinths, Tulips, Daffodils, Jonquils, Narcissi, Freesias, etc., are second to none, and every bulb in these collections are of first size and guaranteed to give good results.

Darwin Tulips

Eclipse—Brilliant Red	$1.25 doz.	$10.00 per 100
Flamingo—Soft Pink	.75 "	5.00 " "
La Candeur—Almost pure white	.75 "	5.00 " "
Moralis—Deep violet blue	.80 "	6.00 " "
Palisa—Rich violet red	.80 "	6.00 " "
Sieraad Van Flora—Rosy red	.80 "	6.50 " "

Darwins 1 Doz. of each of these tulips—$5.00—(72 bulbs)

Cottage Tulips

Bouton D'Or—Golden Yellow	$ .60 doz.	$ 4.50 per 100
Fairy Queen—Rosy Heliotrope and amber	.60 "	4.50 " "
La Merveille—Orange salmon	.60 "	5.00 " "
Picotee (Maiden's Blush) white edged carmine	.60 "	5.00 " "
The Fawn—Fawn with rosy blush	.40 "	4.00 " "

1 Doz. of each of these—$2.60—(60 bulbs)

Daffodils

Emperor—Rich yellow trumpet, primrose perianth	$ .80 doz.	$ 7.00 per 100
King Alfred—Clear golden yellow	1.50 "	12.00 " "
Madame de Graff—Perianth pure white, trumpet pale primrose	.90 "	7.00 " "

1 Doz. of each of these—$3.00—(36 bulbs)

Hyacinths Top Roots

Gigantea—Blush pink	$1.50 doz.	$10.00 per 100
La Grandesse—Finest pure white	1.50 "	10.00 " "
King of the Blues—Porcelain blue	1.50 "	10.00 " "
Ivanhoe—Deep purple	1.50 "	10.00 " "

1 Doz. of each of these—$5.75—(48 bulbs)

A Helpful Bulb Catalogue Free

We are issuing a Fall catalogue that gives full descriptions of our Dutch Bulbs, Perennials, etc., for Fall planting. Send for Copy.

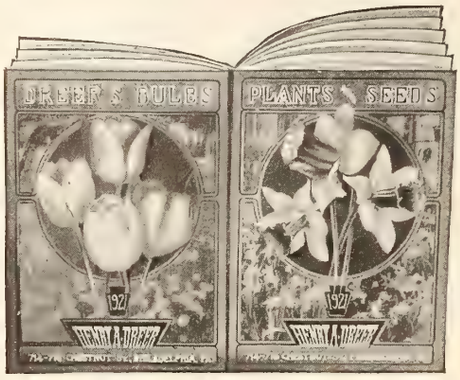
Visit Our Nurseries at Davenport Neck, New Rochelle

Bassi Frères Inc

Seedsmen de Paris *Nurserymen*

New Rochelle, **New York**

DREER'S Autumn Catalogue *for* 1921



Offers the best grade of Bulbs for Fall planting, including Hyacinths, Tulips, Narcissus, Crocus, Lilies, etc., also Plants, Vines, Shrubs, Lawn Grass Seed, Agricultural Seeds, Tools and Implements of all kinds.

It is well illustrated and gives accurate descriptions of the articles offered.

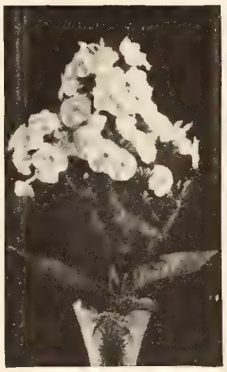
A copy will be mailed free to all applicants. Please mention this magazine when writing.

HENRY A. DREER, 714-716 Chestnut St., Philadelphia, Pa.

Hardy Phlox

Should now be selected and ordered so they may be included in the Fall planting work.

Send for my list which has the last word in Phlox. Over 300 varieties. All that's worth while.



Frau Anton Buchner

W. F. SCHMEISKE
State Hospital Station
Binghamton, N. Y.

IRIS

We offer for the first time varieties produced by Bliss, Morrison, Sturtevant, and Williamson. Also the best of the old.

The Glen Road Iris Gardens
Grace Sturtevant, Prop.
Wellesley Farms, - - Mass.

YOUR GARDEN YEAR

a really helpful seed catalogue. We will gladly send it to you without cost.

Edward T. Bromfield Seed Co.
GARDEN CITY ~ NEW YORK

TULIPS — NARCISSI — PEONIES

Tulips. Late-flowering, all colors, 100 bulbs $2.00.
Narcissi. Ten varieties in mixture, 100 bulbs, $2.40.
Peonies. All different, 7 for $2.00, 3 for $1.00.
For standard and choice varieties by name, send for lists.
All prices include delivery by mail or express.

ORONOGO FLOWER GARDENS Carterville, Mo.

Wagner Flowers

Plant in the Autumn

It's so easy to have a beautiful garden such as you have always dreamed of having if you will only plan and plant during the fall months.

Our Landscape Gardening Department is at your service to furnish planting sketches and if you wish to assume all work of planting—write for particulars and illustrated booklet.

Our catalogue gives you a wide assortment to choose from. Hardy flowers, shrubbery and ornamental trees. May we not send you Catalogue No. 62?

The Wagner Park Nursery, Box 262, Sidney, Ohio

Have a Beautiful Blooming Garden

from April *until* October
by planting our reliable

Irises, Peonies and Gladioli

Now is the time to plant Irises and Peonies. We are growers and importers of the choice varieties. Over 600 varieties of Irises.

RAINBOW GARDENS
701-2 Commerce Bldg., St. Paul, Minn.
Send for our *FREE* illustrated catalogue

IRISES

Our list is quite complete. Special offer. 12 Beautiful varieties including the rarer sorts for $3.00; 25 for $6.00, postpaid, separately labeled.

Mixed Iris $1.00 per dozen, $5.00 per 100. Good strong roots. Price list free.

RANSOM FARM GARDENS, GENEVA, OHIO

Dutch Bulbs, Shrubs

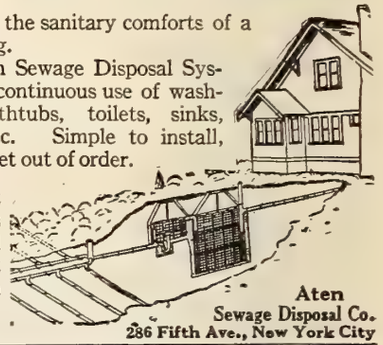
We import the choicest varieties of bulbs from Holland. If you expect to get flowers from bulbs they must be planted in the fall. Now is the time to make your selection. Send for our new catalogue describing a complete list of our beautiful flowering bulbs, also Barberry hedges and other shrubs, trees and a complete line of nursery stock.

A. WASHBURN & SONS
Dept. C. 9
Bloomington Illinois

AWAY WITH THE CESSPOOL

Secure all the sanitary comforts of a city building.

The Aten Sewage Disposal System allows continuous use of washstands, bathtubs, toilets, sinks, showers, etc. Simple to install, nothing to get out of order.



Our booklet No. 11 tells how and why. Sent free upon request.

Aten Sewage Disposal Co.
286 Fifth Ave., New York City

"PUTNEY PERENNIALS"

Grown in the Vermont hills and full of that vitality and hardiness so essential to the success of your garden. Also shrubs and berry plants of quality.

GEO. D. AIKEN Putney, Vermont
"Grown in Vermont, it's hardy"

Don't Wear a Truss

MR. C. E. BROOKS

Brooks' Appliance, the modern scientific invention, the wonderful new discovery that relieves rupture, will be sent on trial. No obnoxious springs or pads.

Brooks' Rupture Appliance

Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable, cheap. Sent on trial to prove it. Protected by U. S. patents. Catalog and measure blanks mailed free. Send name and address today.

Brooks Appliance Co., 275H State St., Marshall, Mich.

Ten PEONIES Bound to Please

When one can truthfully claim one of the largest stocks of high class Peonies in the East, it is very difficult to have "favorites." And yet, from among hundreds we prefer those below as *the* ones through which we might get acquainted:—

Eugenie Verdier—(1st prize winner at Cleveland.) Baby pink	$1.00
Felix Crousse—Extra fine cut flower-red	.75
Festiva Maxima—The finest early white	.75
Darkness—Almost black. Very dark single	.75
Crown of Gold—White and yellow; late; extra	.75
Monsieur Barrall—Very late pink	1.00
L Indispensable—Very large shell-pink	75
Duchess de Nemours—Creamy-white, extra-fine	.75
Fragrans—Very late fragrant rose-pink	.50
Modele de Perfection—Very late light pink	1.00

These will cover the season from early to late, and should bring some fine flowers next spring, if planted NOW.

Special Offer:—We will deliver one Strong Root of each of above, (a fine $8.00 value,) for $5.00. Tell your friends about this, for if you order two collections; we will add an extra choice variety other than above to each of the collections as a premium.

Catalogue tells more about our Guaranteed Peonies

By all means ask for a copy of our large, descriptive, freely illustrated catalogue. It tells *why* we can guarantee our roots to be true to name. Get acquainted with our $100,000 stock of new and rare varieties through one of the *frankest* catalogues ever written on Peonies.

Babcock Peony Gardens Jamestown, N. Y.

Rare Irises

Special September-October Offers

Prices in this ad include delivery East of the Rockies—West of that add 10%.

After the Tulips and Daffodils are gone your garden should smile in the vivid and colorful tints of the exquisitely fragrant

Spanish Iris

At their best all through June.
The bulbs we offer are Extra Strong, each throwing 4-5 flowers.

Belle Chinoise—Golden yellow.
Chrysolora—Sulphur yellow.
Louise—Porcelain blue.
King of the Blues—Deep velvety blue.
La Tendresse—White and yellow.
Flora—Lilac and yellow.
Blanche Superbe—Large white.

3 of any variety 25c. Doz. 90c. 100—$6.50.

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Immense flowers on tall stems. All the good qualities of Spanish Iris but larger. Bloom 12 days earlier.
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Earliest of all Iris—bloom in May.
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3—50c. Doz. $1.50. 100—$10.50.

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14 Bulbs for $1.25

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3 French Roman Hyacinths—Rose—white and azure	1.35	"
2 Soleil D'Or—Golden yellow Daffodillies	1.40	"
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3 Collections of these (42 bulbs)..... $3.50

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The fall of 1914 I bought four dwarf apple trees from you. These are all doing fine. Last year (1920), from one tree, a Stayman Winesap, I picked five half bushel baskets of No. 1 apples, all picked while standing on the ground.

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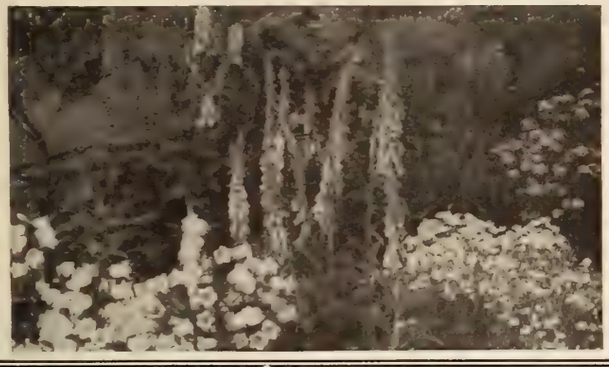

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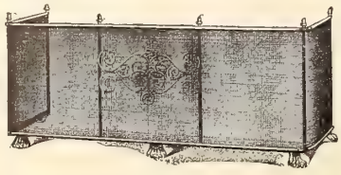

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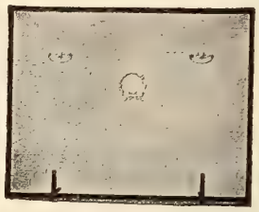

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Farm, Garden and Orchard Tools
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The Morris Nurseries
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My Dream Garden which is coming to be a real garden, with Peonies and Irises in glorious abandon; with Deutzias, and Philadelphus, and Lilacs that make the air heavy with their fragrance

FARR'S PEONIES

Known and Grown in All Good Gardens

IN FRAGRANCE, in color, in profusion of bloom, Peonies rival the rose. I fully believe that no other plants give so much pleasure and satisfaction for so little expenditure of time and care.

Peonies seem to be more widely distributed than most other plants—thriving equally well in the cold of Canada and under the warm suns of the Gulf States. They are permanent plants, too, not dying out after a few years—at Gibraltar, Pa., is a large plant known to be over 80 years old, and quite likely the suns and snows of a century have passed over it, leaving it strong and full of vigor.

Mere Admirers Soon Become "Fans"

There is an innate charm in Peonies which soon makes the casual observer an enthusiast. It may well be so, for the plants increase in beauty of form and flower and in intrinsic value as the seasons pass. Nor is it necessary that large space be given to them, for Peonies will thrive and bloom in the tiniest garden as well as in the collection of the millionaire.

I am so sure that you long to know these wonderful flowers, and to possess some of them for your very own, that I am offering what I call

A Surprise Collection

Years of study and labor have made me familiar with the best Peonies for general growing, and I want the readers of Garden Magazine to know these best varieties. Some are high-priced, some are not, but they are all *extra good*.

For $5 I will send you 6 plants
For $10 I will send you 12 plants

I am not here naming the varieties (but each plant will be properly labeled) for I want this to be your Surprise Collection. I want you to become a Peony "fan," like hundreds of other people. The varieties and roots will be most likely to accomplish this. There will be six or twelve varieties, which, if selected from my catalogue, would cost much more than the sums named. You can depend on what I send—just leave it to me. In fact I will do this—if you are not pleased when the plants bloom in 1923 (for Peonies need two years' growth), *write me and tell me why; you can keep the plants* and I will send back your money. I wouldn't make this offer unless I knew my plants, would I?

Farr's Hardy Plant Specialties

a book of over a hundred pages, with many illustrations in natural colors and photographic reproductions. The book is too valuable for miscellaneous distribution, but a copy will be sent on receipt of $1, which sum may be deducted from your first order amounting to $10.00.

Bertrand H. Farr

Wyomissing Nurseries Co.

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For Your Tulip Garden

Van Bourgondien Bros., Babylon, L. I.

We Grow Our Own Bulbs in Holland — **From Grower to Consumer**

Our Fall Catalogue gives some interesting facts about Dutch Bulbs.
We would be pleased to send a copy to you.

Twelve Breeders You Should Know

	Doz.	100
Alcida Copper bronze	$.65	$4.00
Attraction Glossy violet, large flower	.85	6.00
Bronze King Golden brown with olive base	.75	5.00
Cardinal Manning Dark rosy violet, flushed rose-brown	.60	4.00
Ceres Mahogany brown, very large flower	.75	5.00
General Ney Old gold with olive base	.75	5.00
Gerarda (*Toison d'Or*) Orange-brown, very sweetly scented	.75	5.00
Grand Maitre Purple-violet; very popular	.75	5.00
Marie Louise Salmon and old-rose, edged orange	.75	5.00
Sobrinette Dull bronze with exquisite brown shadings	.85	6.00
Van Bieren White, striped rosy carmine	.80	5.50
Vertumnus Light violet, with gray shadings—unique	.85	6.00

5 bulbs of each of these 12 varieties (60 bulbs) ..... $ 3.50
10 bulbs of each of these 12 varieties (120 bulbs) 6.50
25 bulbs of each of these 12 varieties (300 bulbs) 14.00

Twelve of the Choicest Cottage

	Doz.	100
Caledonia Bright orange-scarlet	$.60	$4.00
Fairy Queen Rosy heliotrope with amber margin	.60	4.00
Gesneriana Lutea Golden Yellow	.60	4.00
Gesneriana Spathulata Brilliant scarlet with dark blue center	.60	4.00
Golden Crown Bright yellow with red border	.60	4.00
Inglescombe Pink (*Salmon Queen*) Soft salmon-rose	.60	4.00
Inglescombe Scarlet Brilliant scarlet	.60	4.00
Inglescombe Yellow The favorite yellow	.60	4.00
Isabella (*Shandon Bells*) Carmine-rose shaded cream	.60	3.50
John Ruskin Most beautiful Cottage. Apricot, rose and mauve	.75	5.00
Picotee (*Maiden's Blush*) Creamy-white, margined soft red	.60	3.50
The Fawn Pale rosy fawn—a favorite	.60	4.00

5 bulbs of each of these 12 varieties (60 bulbs) ..... $ 3.00
10 bulbs of each of these 12 varieties (120 bulbs) 5.00
25 bulbs of each of these 12 varieties (300 bulbs) 11.00

Twelve Distinctive Darwins

	Doz.	100
Baron de la Tonnaye 26 in. clear carmine rose shading to soft pink	$.60	$4.00
Clara Butt 22 in. Salmon pink, a favorite	.60	4.00
Dream 24 in. soft lilac; large flower	.65	4.50
Europe Brilliant red with white center	.70	4.50
Farncombe Sanders 25 in. Brilliant scarlet of great beauty	.70	5.00
Inglescombe Yellow Large yellow, (really a Cottage Tulip)	.60	4.00
La Tulipe Noir 25 in. deep maroon black	.75	5.00
Loveliness 26 in. Soft rich rose	.60	4.00
Pride of Haarlem 30 in. Large brilliant rose-carmine	.70	5.00
Rev. H. Ewbank 22 in. Soft lavendar-violet	.60	4 00
Sieraad Van Flora 28 in. Vivid pink of extreme beauty	.75	4.50
White Queen 22 in. Splendid white flower.	.60	4.00

5 bulbs of each of these 12 varieties (60 bulbs) $3.00
10 bulbs of each of these 12 varieties (120 bulbs) 5.50
25 bulbs of each of these 12 varieties (300 bulbs) 13.00
100 bulbs of each of these 12 varieties (1200 bulbs) 50.00

Tulips Daffodils Hyacinths Narcissi Crocuses Peonies Irises

Our Guarantee We guarantee all of our bulbs, roots and plants to grow and to be true to name. We will replace any bulb, root or plant, prepaid, if found otherwise.

See advt. August Garden Magazine Back Cover.

Send for Our Fall Catalogue

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THE COUNTRY LIFE PRESS, GARDEN CITY, N. Y.

PLANTING THE BULBS

INVITING THE BIRDS

STORING THE CROPS

GARDEN MAGAZINE

OCT. 1921
25 CTS.

VOL. XXXIV. NO. 2.

Doubleday, Page & Company, - Garden City, New York

TULIPS, HYACINTHS, DAFFODILS

The Flowers of Earliest Spring

Who doesn't know the charming little Daffodils, the gaudy Tulips, and fragrant Hyacinths with all their manifold attractions. These flowers are really easier to grow than many of our popular annuals such as Nasturtiums, Sweet Peas, and many other more popular favorites. Bulbs are flowers in embryo. Put them into the soil and they are bound to bloom in due time. We herewith offer two selections and a special combination of all three flowers mentioned above.

Hyacinths for Indoors or Beds

Equally good for pots or for beds, as shown below. Hyacinths are perfectly hardy and live in the garden year after year. The collection of 27 distinct varieties embraces named sorts only. The colors range from pure white and blush pink to deepest shades of rose and blue.

The bulbs are uniformly first size, guaranteed to bloom if given ordinary treatment and normal conditions. You'll find this a great $3.75 bargain.

A Fine Collection of Cottage and Darwin Tulips for Only $1.40

The way to get acquainted with this magnificent race of late flowering tulips is to grow a collection of named varieties like this, and then plant the kinds you like most, in quantities next year. The 31 different sorts we offer embrace 23 standard sorts and 8 splendid novelties. There is no end to their variety of colors and shades.

How to Get 12 Daffodils FREE

To encourage liberal Fall planting of bulbs and to make more friends for the lovely Poet's Narcissus we will send with every order for both collections, a dozen Poet's Narcissus bulbs free. Plant them near some shrubbery and create a perfect picture. Complete bulb catalogue FREE.

A Unique Bulb and Plant Service Yours to Command

We not only supply Dutch bulbs as offered above, but also maintain one of the finest collections in Peonies in the World, grow acres of Iris and other perennials, besides being the largest Rose growers in the World. Please learn to look upon us as plantsmen to the American people.

The Good & Reese Co. *Department K* Springfield, Ohio

A Greenhouse Suggestion You will Welcome

The cost of a workroom often runs the total cost of the greenhouse a bit high. It can be kept down by building our self-contained workroom like this one. Glad to send you photos and full particulars.

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© 1921 Greta Schoonmaker, Sculptor

Our American Sculptors are again concerning themselves with the development of examples of their art for the adornment of our Gardens, Homes and Conservatories, with greater success than ever.

These may be enjoyed in complete representation at

THE GORHAM GALLERIES
386 FIFTH AVENUE
NEW YORK

Now then, for that Garden of May Flowers—

Do you know that there is one class of plants that does *not* need very many "April Showers" to produce "May Flowers"? The "Dutch" bulbs in general and Tulips in particular come to you with a flower already wrapped in each little bulb;and among the hundreds of Tulips, in many classes, none are surer to please than the

May-flowering *or* Cottage Tulips—
brilliant in borders, lasting in vases.

Even later to bloom than Darwin Tulips, these surpass in lasting qualities and are quite valuable to prolong the season. Some of the daintiest color combinations are found in John Ruskin and Picotee. We guarantee you unlimited delight if you will

Plant these in Masses.

Fairy Queen—Magnificent, large, lilac and amber. 65c. per doz.; $4.50 per 100

Gesneriana Spathulata (*Major*)–Crimson scarlet with blue base. Striking, large flowers. 65c. per doz.; $4.50 per 100

Golden Crown—Excellent to plant in clumps among shrubbery. Golden yellow with red edges. 65c. per doz.; $4.50 per 100

John Ruskin—One of the most beautiful—a unique combination of salmon-rose with rich yellow edges, shaded with lavender. 85c. per doz.; $6.00 per 100

La Merveille—A long-stemmed, perfectly shaped flower with rich orange-scarlet petals shading to a yellow base. Of striking effect wherever planted. 20-30 in. 60c. per doz.; $4.00 per 100

Picotee (*Maiden's Blush*)—Pointed white flower margined with red. One of the most popular. 20 in. 60c. per doz.; $4.00 per 100

Special Offer:

We will mail one dozen each of the above 6 superb kinds for $3.50 postpaid. This special price to Readers of Garden Magazine only, so please mention this Adv.

Catalogue of Superior Bulbs and Hardy Perennials for Fall Planting gladly sent free on request.

Chas. H. Totty Co.
Madison,
New Jersey

When the Lilacs Bloom
around the Home

When Springtime's Glory chases Winter's Gloom, when Lilacs and Spiræas vie with Mock Oranges and Golden Bells to make our gardens a veritable fairyland, *then* it is that you wish for *more* of these Spring treasures. And then you discover that you have to wait another year; for, like most plants that bloom early, Spring planting partly robs you of the first Spring's bloom.

Spring Flowering Shrubs to be Planted This Month!

Here is a selection of the choicest among early flowering shrubs that should be planted now, for best results next Spring:

Azaleas
Barberries
Blueberries
Deutzias
Dogwoods
Golden Bells
Honeysuckles
Lilacs
Mock Oranges
Pavia
Snowberries
Viburnums
Indian Currants

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Peonies *must* be planted this month, if they are to reward you with flowers next June. Here at Rosedale we nurse the peers of Peonydom and you'll be delighted with the quality of Rosedale Roots.

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"The Home of Well-Grown Evergreens"
Tarrytown *Box A* *New York*

OCTOBER, 1921

THE GARDEN MAGAZINE

CONTENTS

COVER DESIGN: DOGWOOD AND CHICKADEES *Frederick G. Mories*

PAGE

BIRDS IN THE GARDEN - - - - - - - - - - - - - - - 69
Photograph by N. R. Graves Co.

INDIAN BASKET GRASS IN PARADISE PARK - - - - - - - 70
Photograph, courtesy Chicago, Milwaukee and St. Paul Railway

THE FLOWER GARDEN UNDER GLASS - - - - - - - - - 71
Photograph by Arthur G. Eldredge

THE MONTH'S REMINDER—WHEN TO DO WHAT YOU WANT TO DO - 72

INVITING THE BIRDS - - - - - - - - - *Edward H. Parry* 74
Photographs by the author, National Association of Audubon Societies, Mattie E. Hewitt and N. R. Graves Co.

PLANTING NOW FOR BIRDS THE YEAR THROUGH - - - 77

GETTING THE BEST BLOOM FROM THE BULBS *Henry Gibson* 78
Photographs by Arthur G. Eldredge

IF YOU ARE GROWING FRUIT - - - - - - - *E. I. Farrington* 83
Photographs by the author

GARDEN BIRDS—POEM - - - - - - - - - *Louise Driscoll* 85

GARDENS OF MR. E. A. WOODS - - - - - - - - - - - - 87

WINTER HOUSING FOR ROOTS AND BULBS - *Charles Olive* 88

WINTER QUARTERS FOR TENDER PERENNIALS, ETC. *Carl Stanton* 88
Drawings by the author

GOOD RESULTS FROM FALL PLOWING - - - *E. V. Laughlin* 89

EVERGREENS THAT KEEP GREEN IN WINTER *Henry Wild* 90
Photographs by Henry Troth and Arthur G. Eldredge

BIRDS AND VEGETABLES VS. CATS AND CATERPILLARS *Edith M. Patch* 93

BY ALL MEANS PLANT NUT TREES *Lewis and Mary Theiss* 94
Photographs by American Forestry Association, Helen W. Cooke and others.

OCTOBER'S MEANING TO THE GARDENER - - - - - - 97

ONE REASON WHY SOME FRUITS DON'T FRUIT *D. F. Jones* 98
Photographs, courtesy of Miss Ida Sutton

THE REGAL LILY FOR EVERYMAN'S GARDEN - - - - 99

THE GARDEN CLUBS' SUGGESTIONS FOR PLANTING BIRD BATHS - - - - - - - - - - - - - - - - - 100
Photographs by Edwin Levick

AMONG OUR GARDEN NEIGHBORS - - - - - - - - - - 101

THE OPEN COLUMN - - - - - - - - - - - - - - - - - 102
Photographs by Mrs. C. F. Kramer, Mrs. Sarah A. Pleas, and drawing by Garrett M. Stack

A SCOUNDREL IN STRIPES - - - - - - - - *H. F. Button* 108
Photograph by the author

BIRD BOOKS FOR THE GARDENER - - - - *L. E. Hubbell* 116

HEADING CABBAGE DURING WINTER - - - *Lew Brown* 120

LEONARD BARRON, Editor

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Mallow Marvel
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Three other sorts are available

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Perennial plants are now at rest, having made their full season's growth. October is the ideal month to plant the earliest flowers of Spring—many of those we send will bloom in seven months from now.

This is also an eleventh hour reminder that bulb planting is in order. If you are in doubt what to plant, address our Landscape Department. If you need Tulips, Daffodils, Hyacinths, etc., please remember us as the largest retail bulb merchants in America.

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are issued at regular intervals, —three or four times a year. They will acquaint you with the "World's Best" Seeds, Bulbs, Plants and Nursery Stock. If you are not on our mailing list, please write for latest catalogue TO-DAY.

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Elliott Nursery Co., 605 Magee Building, Pittsburgh, Penna.

The Garden MAGAZINE

Vol. XXXIV, No. 2 — October, 1921

"AN INCANTATION SO SERENE,
SO INNOCENT, BEFITS THE SCENE:
THERE'S MAGIC IN THAT SMALL BIRD'S NOTE—"
Henry Van Dyke

Without the sparkling note of bird life our gardens would be inconceivably silent and lustreless places. Nothing lures these little visitors so surely as the soft trickle of water

"YE LIVING FLOWERS THAT SKIRT THE ETERNAL FROST!"
Samuel Taylor Coleridge

Every region has its characteristic beauty; during June and July the feathery tufted bloom of Indian Basket Grass (Xerophyllum tenax) stars the slopes of Paradise Park. This flower has not been cultivated in the East, so far as we know, though a sister species (Xerophyllum asphodeloides, commonly known as Turkey's Beard) is found in the dry, pine barrens from New Jersey to Georgia.

"HOW STRANGE TO GREET, THIS FROSTY MORN,
THESE CHILDREN OF THE MEADOWS."
John Greenleaf Whittier

There is really no reason why the garden should be only a half-year affair. Here are Hyacinths, Daffodils, Tulips, Azalea, Cyclamen, and Primroses ready with their fragrant and cheery greeting on the wintriest of days; and Nasturtiums gleefully ascramble overhead. The Primroses, by the way, have been giving continuous bloom for more than six months quite undismayed by their lowly position

WHEN TO DO WHAT YOU WANT TO DO

The Month's Reminder

OCTOBER—THE MONTH OF FALL PLANTING

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practice. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

(*Copyright, 1921, Doubleday, Page & Co.*)

THIS is the big fall planting month; practically all hardy shrubs, trees, and herbaceous perennials may be set out now. There are exceptions, however, and thin-barked trees (like ornamental Peaches, Cherries, Birches), and thick-rooted ones (like Magnolia), etc., are as a rule better left till spring.

Mulching material for use when the ground has frozen over to be collected. Mulching spells no small part of the success of fall planting.

All spring-flowering bulbs (Hyacinths, Tulips, Crocuses, Narcissus Lilies, etc.) to be planted as soon as possible.

Collect material for protecting evergreens that are not quite hardy or scorch readily with the winter sun. Evergreens of symmetrical form may be protected from heavy snow breakage by being tied in.

Lawns

Cut the grass as long as it continues to grow. It is a mistake to allow it to remain during winter with the idea of it protecting the roots during severe freezing weather. This old long grass dies, and is no end of trouble in the spring.

Grading for new lawns to be done as circumstances permit; but the sooner the grade is established and the ground occupied with a cover crop, the better.

In many sections there is still time to get a stand of grass if the seed is sown early in the month.

Division and Resetting in the Flower Border

Any contemplated changes in the flower beds and borders to be carried out while most of the plants are dormant, or nearly so, and you have time for the work.

Peonies, Phloxes, and other perennials do not flower well if they become overdense; they need breaking up and resetting every four or five years, for best results.

The usual method of "division" is to chop the roots into four or five pieces with a spade or edging knife. In the case of Phloxes, Asters, Physostegia, and such like, use two digging forks placed back to back, forcing the clumps apart; select the outside, or younger portions, for replanting.

Annuals to be cleared off as soon as frost cuts them down.

Vegetables for Next Year's Crops

Sow Winter Spinach and Onions to remain in the ground over winter. Protect by covering with salt hay when cold weather comes.

Roots of Chicory (French Endive) to be lifted for early forcing. Cut off foliage just above the crown, and pack thickly in boxes or large pots. Cover the roots up to the crown with soil, and place in a reasonably cool temperature where light is excluded. A mushroom cellar will do, but a slightly cooler temperature is better; under the bench of a carnation or violet house is suitable if several inches of soil is placed over the crowns to blanch the growth. If watered when planted, can be let alone for some time.

Rhubarb roots to be dug and laid aside to rest prior to forcing if early supplies are wanted.

Globe Artichokes to be protected against heavy frosts. Next year's crop may be provided for by selecting a few of the strongest plants, lift and pot them, and winter in a cool house. Cut back the foliage and a few of the strongest roots. These old roots will furnish suckers for propagating next year.

Cover crops may still be sown as the ground is cleared. Where this is not practicable, ridging is beneficial, especially in heavy soil.

Where the sub-soil is inert hardpan, the remedy is bastard trenching or double digging. Or a sub-soiling plow may be employed. Excellent results are sure to follow.

Onions lifted last month and now ripened, to be cleaned of loose rubbish and laid out in thin layers on a dry, airy shelf in a frost-proof place, or strung on ropes and hung up.

Vegetables Still Growing—Saving from Frost

Toward the end of the month dig, for housing or pitting, Beets, Carrots, Sweet Potatoes, and all other root crops not to be left in the ground all winter.

Celery in full growth to be earthed up, and during the last part of the month the first lot may be stored in trenches for the winter. Prepare for protecting the remainder from severe frosts.

When frost threatens lift some of the best Cauliflower and plant close together in a deep frame, or cellar.

Endive approaching maturity will blanch if the sash is covered with shutters for a week or two.

Squash and Pumpkins to be gathered and stored before they are touched by frost.

Jerusalem Artichokes are ready for use any time after the plant flowers. Lift and store like potatoes after the tops die down.

Eggplants and Peppers to be picked before they freeze; they will keep for some time on dry straw in a dry, airy place.

Asparagus foliage to be cut down as soon as it shows signs of ripening. Clear weeds and rubbish from the bed and after frost apply a thick covering of manure.

Herbs, such as Thyme, Sage, Sweet Marjoram, etc., to be gathered, when perfectly dry, tied in bundles, and suspended from the ceiling of a dry, airy room.

Tending the Tender Roots, etc.

Dahlias, Tuberoses, Gladiolus, Cannas, Caladiums, Tigridias, and all summer-flowering bulbs to be taken up and stored away, after being air-dried, in some airy place free from frost.

Tender Waterlilies in tubs to be brought indoors after the tops freeze, and gradually dried off to ripen the bulbs.

Decorative purpose plants about the dwelling to be brought indoors on the approach of frost.

Everlastings (Helichrysums, Gomphrenas, etc.) to be cut before frost and dried out somewhat in the sun before being brought indoors.

Preparations for Next Year's Fruit

Transplanting and planting new trees to be done as early as possible, to become established before severe weather sets in. Mulch the ground for a considerable area round the roots.

Strawberries layered in pots may still be set out. Remove runners from earlier plantings. Give old beds a thorough clear-up and get ready mulching material for use next month.

All fruit to be gathered before frost touches it, and avoid bruising in handling, which impairs the keeping quality.

Grafting cions of various fruits to be gathered as soon as the leaves fall, and buried in sand out of reach of frost, to remain until grafting time in spring.

Where it is not necessary to bury Blackberry and Raspberry canes to prevent winter-killing, tie securely to the trellis or other supports. Shorten any extra long canes.

Making Use of the Frames

Lettuce, planted now, will provide a supply of salad until Christmas, if protection can be given by banking leaves or manure around the frames and by covering with mats, etc., on severe nights.

Pansies, English Daisies, Myosotis, Canterbury-bells, etc., being wintered in coldframes, to be kept dry enough to avoid soft growth, which damps readily during warm periods in the winter. When severe weather sets in, cover with dry straw or leaves and put on sash to keep dry. When using leaves, place some small twigs over the plants to prevent settling down too solidly.

Under Glass Gardening for Winter

From this time onward work in the greenhouse becomes of more importance in the current routine.

Cold nights must be watched for, and the heating system got ready for use at a moment's notice. A thermostat is really essential in a small house.

Hardwood plants (such as Acacia, Genista, Azalea, and Camellia) to be given the protection of a cool house or pit until the middle of November. See that all such plants are free from insect pests.

Pot fruit trees that were repotted a few weeks ago may remain outdoors for some time yet to ripen their wood and prepare for next season's work. Keep free of scale and do not allow them to become water-logged.

Planted-out vines in the greenhouse (such as Allamanda, Stephanotis, Bougainvillea, etc.) to have the water supply reduced gradually, so as to give them a period of rest. Do not withhold the water until the foliage falls. Growth to be checked and the new wood ripened before they are started into active growth again.

In the palm house, keep a drier atmosphere and give less water than when the plants were in active growth; too much heat and water result in the Palms losing color.

As Chrysanthemums Flower

Many varieties of Chrysanthemum will begin opening blooms this month and shading will improve the quality of the flowers. It is not good practice to apply whitewash to the glass, as the petals will damp off during damp dark weather if the shade is too heavy. Portable shades are available which can be moved at will. Keep after the black fly and have the house fairly dry at night to prevent mildew. A light application of soot water improves the color of the flowers; all other feeding to be discontinued. Watering to be done only when actually needed and in the forenoon.

Carnations Now in Benches

Carnation foliage to be kept dry overnight. Look out for rust; pick off and burn infected leaves; spray with copper solution. Thrips are more easily controlled as the weather gets cooler. Spray regularly for red spider. Do not close the ventilators at night but keep a "crack" of air until a little heat in the pipes fails to keep the temperature right. A light mulch of rotted manure along the south edges of the benches will protect the young roots from the sun. If the stems are weak, apply a dressing of lime. Give supports.

Roses Now in Benches

Early planted Roses will have given a fair crop of bloom by this time, and as the breaks show again a little bone meal may be applied, followed by a mulch of manure. After watering well allow the soil to become a little dry before another watering. Avoid a wet, stagnant soil. Lime water will help. Be sparing in the use of manures rich in nitrogen just now when the temperature is bound to fluctuate on warm days; an over-dose makes soft plants.

The Lilies for Easter

Lilium formosum planted in August will now be making roots, and some shoots will be pushing. They need not go to the greenhouse yet, but remove the soil which covers the pots to avoid lanky stems. Place in a frame with a sash over. Lilium Harrisi planted for early winter flowering will be pot-bound enough by this time and ready to be taken in a warm house with temperature of 70 degrees if plenty of water is given to keep the soil moist at all times and early bloom is wanted. Syringe the foliage several times a day and keep down green fly.

Plants to be Brought Inside

Field-grown Roses to be lifted, potted firmly, and placed in a coldframe. Spray on bright days. Cover the frames during rainy weather; get well-ripened wood and re-established plants which force well in early spring.

Shrubs for forcing, such as Lilacs, Deutzias, Forsythias, Pyrus, Lonicera, Spireas, etc. (see back issues of this Magazine) to be lifted and potted in readiness for spring forcing.

Clumps of Chrysanthemum maximum, variety King Edward VII, can be lifted and carried along in a frame for forcing next January. Give Coreopsis the same treatment.

Violets may still be planted; choose a dark day and avoid over-watering. An occasional dose of lime water will keep the soil sweet.

Mignonette, Stocks, Snapdragons, and other plants of this type for forcing may still be benched. Water carefully until thoroughly rooted.

Cold-storage Spireas for mid-winter flowering to be purchased and potted up. Place in a cold house or under the bench until growth starts; then give full sunlight and water freely.

Tulips for forcing to be potted or boxed up as soon as possible. Give ample drainage.

Canterbury-bells, Dielytra spectabilis, and the variegated Funkias for forcing to be lifted and potted up. Place in a frost-proof frame until needed.

Cinerarias to be potted on as they fill the pots with roots. Space out to give a chance to develop fine foliage all around.

Easter Suggestions

Rooted cuttings of Geraniums intended to flower round Easter time to be potted up as soon as they are ready and kept growing right along. Or grow along in a frame with proper protection, where, with favorable weather, they might remain until the Chrysanthemums are out of the way.

Cuttings of Mrs. Sanders Marguerite for Easter flowering to be rooted now and carried in a temperature of 50 degrees. Small plants in 4-inch pots, well potbound, will flower earlier than larger plants that have been given plenty of root room.

Now Growing and Needing Care

Otaheite Oranges to be given a place on a sunny bench in a temperature of 54–58 degrees at night with the usual rise with sun heat during the day. Strong plants need a great deal of water, some more than others. Syringe to control scale and mealy bug. Give liquid manure weekly when the pots are well filled with roots.

Side shoots of Pandanus Veitchii to be taken off when a fair size is attained (and then always with a heel). Place them in a warm propagating case, with a brisk bottom heat, and pot up when they have made roots about half an inch long. A good soil is three parts fibrous loam, leaf mold two parts, and one of sand. Give temperature of 65 degrees at night.

Specimen winter-flowering Begonias need space to develop. Elevate on inverted pots or blocks of wood as close to the glass as possible, and so that every overhanging branch is fully exposed to the light. Keep temperature not below 55, not above 79.

Snapdragons, planted early and making strong growth, to be supported with stakes as needed. Disbud. Have the foliage dry overnight, or rust may develop. Spray with suitable fungicide, as a preventive.

Bedding-plant cuttings now rooted to be potted up and grown along in a cool temperature.

Seeds to be Sown Inside

Main sowing of Sweet-peas to be made this month. Tie up the early sown batch and keep the flowers picked clean. Maintain temperature evenly at 45–50 degrees during the night, and up to 60 during the day. Stir the soil carefully, and water regularly. Cut out the laterals, and tendrils. Strong-growing Spencers may be nipped and two growths taken up.

Early sown Mignonette benched last month needs supports. Seeds may be sown now for January and February flowering.

Calceolaria leaves to be inspected for insect pests, and sprayed.

Succession sowing of Beans, Cauliflower, Lettuce, Spinach, and Radishes can be made at various intervals.

Pansies for overwintering in coldframes may still be sown. Those sown last month may be set outdoors where they will winter, if given protection with salt hay or similar material.

Continue planting Paper White, Grand Soleil d'Or, and Trumpet Major Narcissus. Some of the early planted stock that is well rooted may be brought into a carnation house temperature.

INVITING THE BIRDS

EDWARD H. PARRY

Deferring the Autumn Clean-up and Offering Hospitality to the Feathered Folk a Mere Matter of Common-Sense Gardening

NEVER will we forget the year we "discovered" winter. Theretofore our late autumn was an orgy of cleaning up. We regarded flower-heads and berries as the remains of summer whose removal was a matter of course. In preparation for winter, lawn and garden were made a trim desert, and a desert they remained until spring. But one year something stayed our hand and we discovered the claims and cheer of winter. We thrilled to the revelation of a sleeping earth made bright with lovely birds, when we saw them flocking to the yellow-brown tangle of frosted flowers; and we rejoiced when, after snow, our eyes passed from the lifeless, level floor of the lawn to the garden with its garlands and grottoes of immaculate ermine and alabaster, where brown and slate-colored and rosy-red birds bickered and fluttered so gaily. By no act of ours, the summer garden was become the liveliest of winter gardens.

So easily—simply by abating the autumn clean-up—we gain the merriest guests. Seed-heads of Sunflowers, Zinnias, Cosmos, Marigolds, and other common garden flowers, are granaries quickly found and resorted to all winter by white-in-tail junco; goldfinch; chickadee; white-throated, tree, song and fox sparrows. The destruction in autumn of such natural food supplies is cruelly unkind to the birds—which are not stray dogs that they can be buffeted about, intentionally or unintentionally, and the world made none the poorer. Each wrong done them is a boomerang. But further, the plants provide the handiest and cheapest covering for the soil, as well as, it is likely, the best, since nature's mulch is commonly better than any artificial one. And perhaps it will be shown that our coal bills are actually reduced by keeping shears and fire away from the flower garden, for what more surely acclimates us to the cold than sight of birds frolicking in snow unconscious of the least discomfort? Though it is nice to regale them with breadcrumbs and peanuts, natural foods served naturally are a more permanent satisfaction.

Esther Heacock, Photo.

JUNCOES AT A WINDOW SHELF

From October until April the Junco's cheery twitter is heard about our windows, for he is an appreciative little visitor and seldom declines any proffered hospitality. With the coming of spring he flits northward again.

ALTHOUGH winter cheer is insured by doing nothing—in autumn, the great pleasure is to act. We do not rest with our work in the garden, propping certain flowers above the snow with strings, peasticks and trellises. Each plant on the place has now a new test to meet: does it entertain birds, ever give them food or shelter? If not, and there is one as suitable in other ways that will, out it goes. Beauty of form, foliage and flower is not disregarded, but neither is the beauty of the birds which the plant does, or does not, attract. Wildings find place in the birds' own garden, elbowing old-fashioned plants, Sunflowers, Zinnias, and the like, at the foot of the stump which supports the bird bath.

The ground is carpeted with evergreen Partridge-berry studded scarlet with tiny fruit; great-headed Joe-Pye-weed serves junco, goldfinch and native sparrows; Pokeberry, with the Woodbine on the house, tempts the hermit thrush to tarry; and there are Wintergreen and False Spikenard and, of course,

A POOL THAT PLEASES

This type of shallow, low-rimmed pool is well suited to the needs of the bird and enables him to bathe in comfortable security. Simple in design and planting, it is quite possible in even a small garden.

Mattie Edwards Hewitt, Photo.

ABUNDANT SHELTER AND FOOD A-PLENTY

Here are ideal nesting quarters and a varied bill-of-fare. The seclusion of this naturalistic planting has great charm for other visitors besides the birds. Garden of Mrs. Gordon Abbot, Manchester, Mass.

climbing Bittersweet and Greenbrier near by in the wild Cherry and Mulberry trees. The Mulberry, by the way, caters to the little folk long after its branches are bare; in early spring, sparrows and juncoes are still scratching in the leaves beneath it for seeds from the fallen fruit. When starlings come to the garden crowding upon each other's toes and always voracious, they must quickly be driven away or, in a little while, we should have nothing left for our native birds.

Though there is cheer for the birds in every corner of the place, a principal care is to coax them close to the house, so that their voices and the glint and grace of their wings may intimately affect the family life, and the birds become members of the family. A clump of shrubbery near by, an undisturbed flower-bed under a window, and persistent berries on house vines of Honeysuckle and Virginia Creeper and hips of the Climbing Rose accomplish it. To these come the winter wren, the purple finch, clinking notes like ice in a glass tumbler, the cedar waxwing, and the belated or early or probably wintering bluebird, as well as others of the birds already mentioned. In an obscure corner, under windowsill and eaves, Honeysuckle grows thickly, offering such night quarters as junco and song sparrow can scarcely decline. Of course they would decline readily enough if it meant sharing with English sparrows.

Shrubs and small trees with berries "brag for all vegetation" in the face of winter. How the ruddy berries gossip of summer! How they glow in the keen air and radiate hospitality! If coated with ice, they glow more warmly. And when birds come among them—who misses anything then? The Mountain Ash is always beautiful, and its berries are favorites with so many birds that it pays to net the ripening clusters and to uncover a few at intervals during severe weather. The tall Cranberry Bush merits planting for its own loveliness and for the sake of the cedar waxwings which appear actually to enjoy the extremely acid fruit. The scarlet berries of a single bush will keep a flock of the gypsy-hearted birds from their travels for days, during which time their incessant "ghostly whispers," which have been likened to the piping of a peanut-roaster on a city corner, promote in the hearer a similarly snug forgetfulness of the cold. Excellent, too, are Bayberry, Barberry, the Thorns, the Dogwoods (whose berries are mostly gone by Christmas), Juniper, Sumac, and Black Alder, to name several of the most adaptable and most popular with winter birds in the Middle Atlantic States.

TALL evergreens are best solitary or set thinly as windbreaks, for numbers together shelter such enemies of birdlife as hawks, bluejays, and red squirrels, but an evergreen hedge surrounds the vegetable garden, and juncoes and sparrows roost here in hundreds, redeeming the bleakest twilights with their bustle and bright voices. There are clumps of shrubbery

that are too dense and unkempt to suit the fastidious, but pleasing to such as like a tang of wildness in the cultivated, and "a joy forever" to the birds.

A few Lilac blooms are permitted to set seed for the delectation of cardinals, since it means much to have these gorgeous living blossoms in the bare boughs in January; and a Forsythia mocks ordinary conceptions of discreet size, giving some seed to finches, a retreat to all birds, and, in earliest spring when the bush is a curling mist of limpid yellow, an invitation to the cardinals to perch—what colors!—and whistle their sweet calls in quite excellent English, while nipping off an occasional petal—they could take five hundred times as many without the bush being visibly poorer! And O, if we had space what luxuriant Rhododendrons there should be to give the landscape inspiriting color and refuge to startled wings; what beds of decorative grasses should rustle uncut in the north winds and "tseep" with sparrows; and what dense sequestered banks of Honeysuckle, and thickets of Wild Rose, Barberry and Bayberry should offer food and cover to bobwhites!

The flower or fruit is not the only attraction a plant has for birds. A potent appeal is made through the insects it harbors. This last is what generally captures titmice, kinglets, woodpeckers and brown creeper. To their innumerable eggs of aphides, the White Pines owe their merry winter congresses of kinglets and chickadees. Similarly, the Oak, Willow, Poplar, Birch, and Apple bulk larger in many birds' eyes than other trees. But this phase of the subject is too complex for the close of a brief article.

A writer recently in the magazine suggested that pruning of fruit trees is overdone; we have often thought the same concerning certain ornamental trees and plants.

Rare charm lies in natural grace. But, however that is, what curious landlords we should be to prune sharply our vines and hedges in autumn—to deprive countless friends of shelter when most needed—when the pruning would be done soon enough months later. To think of driving the birds away to animate another's winter! Pruning is largely a part of the usual autumn clean-up that is best done in spring. By leaving the autumn dead untouched, we gain the inestimable benefit of winter life.

Nathan R. Graves Co., Photo.

SUMMER LUXURIANCE WHICH SERVES IN SEVERAL WAYS

Delightfully informal in character such a corner pleases the lover of fragrance and color while furnishing the happiest of settings for a bird bath. All through the winter it will continue an interesting and animated feature of the garden, for feathered folk flock wherever water is to be had; and here there will be quite a feast as well. The hips of the Climbing Roses and the seeds of the many perennials offer food which birds are quick to find

PLANTING NOW FOR BIRDS THE YEAR THROUGH

BIRDS—long appreciated for their joy-giving song and the note of brilliant life they bring to the garden—have come to be recognized as tireless allies of the gardener in his perennial struggle against insect and other plant enemies. They are indispensable spokes in the economic cycle, important factors in preserving a normal balance; and wherever there is a dearth of birds, insects and plant disease become rampant. Hence, it behooves the gardener, when making his plans, to remember these small feathered helpers and to encourage their friendship.

It is quite possible to find a considerable number of trees, shrubs, and vines which are distinctly decorative in character and which by reason of their berries, fruits, or cones are distinctly alluring to the bird as well. It is also true that in localities where wild fruit is plentiful the cultivated crops are less frequented by feathered visitors, so that it is often wise to plant Mulberries and Shad-bushes to draw them away from your Strawberries and Cherries, or Elders and Virginia Creeper to protect your Grapes.

WATER is a very important feature in any garden plan, for not only does it supply a definite want but it often actually serves as a measure of plant preservation. Many birds, it is believed, seek fleshy fruits primarily for the water they contain rather than for sustenance.

Bird baths should be shallow, with a rim easy to perch upon, and a shelving slope that the bird may navigate in comfortable security. Some combination bath-and-fountain affairs appear to be specially designed to drown their trusting visitants.

During the summer season, under normal conditions, nature provides amply for her various dependents, but wherever the encroachments of man have altered the balance, supplementary planting is necessary. In winter it is imperative if we expect the birds to continue to inhabit our gardens and grounds; and winter is the season when we most need the cheer of their presence—they keep the garden alive!

Many of these little garden guests come and go with the seasons though quite a number linger the year round where conditions are to their liking. Fall offers ideal opportunity for setting out most trees, shrubs, and vines; here are some which find favor with the birds and add interest to any planting:

I. FOR SUMMER FOOD SUPPLY

BLUEBERRY (Vaccinium) for catbird, cedarbird, crow, grouse, jay, kingbird, robin, sparrow, woodpecker.

BARBERRY (Berberis) for cedarbird, crow, grouse, kingbird, quail, robin, sparrow, woodpecker.

BRAMBLES (Rubus) for blackbird, bluebird, jay, robin, sparrow.

CHERRY AND PLUM (Prunus) for blackbird, catbird, cedarbird, crow, grosbeak, jay, kingbird, oriole, robin, thrasher, warbler, waxwing, woodpecker.

CHOKE-BERRY (Aronia) for finch, grosbeak, jay, junco.

DOGWOOD (Cornus in species) for blackbird, bluebird, catbird, cedarbird, chickadee, crow, grosbeak, jay, junco, oriole, quail, sparrow, swallow, thrasher, vireo, woodpecker.

ELDER (Sambucus) for blackbird, bluebird, catbird, cedarbird, chickadee, crow, grosbeak, jay, junco, oriole, quail, robin, sparrow, swallow, thrasher, vireo, woodpecker.

GRAPE (Vitis) for blackbird, cedarbird, crow, grouse, jay, quail, robin, sparrow, swallow thrasher, woodpecker.

NETTLE TREE (Celtis occidentalis) for blackbird, bluebird, cedarbird, crow, robin, woodpecker.

RED MULBERRY (Morus rubra) for blackbird, bluebird, bobolink, catbird, cedarbird, crow, cuckoo, grosbeak, grouse, jay, kingbird, oriole, phoebe, quail, robin, sparrow, tanager, thrasher, vireo, woodpecker.

SHAD-BUSH (Amelanchier) for blackbird, bluebird, cardinal, cedarbird, crow, finch, grackle, grosbeak, grouse, jay, oriole, robin, tanager, woodpecker.

SPICE-BUSH (Benzoin aestivale) grouse, quail, sparrow, woodpecker.

TUPELO (Nyssa sylvatica) for catbird, jay, quail, robin, thrasher, woodpecker.

VIRGINIA CREEPER (Ampelopsis quinquefolia) for blue bird, chickadee, crow, grouse, kingbird, quail, robin, sparrow, woodpecker.

II. AFFORDING FOOD IN WINTER

HONEYSUCKLE (Lonicera) for finch, grosbeak, jay, junco.

MOUNTAIN ASH (Sorbus) for bluebird, cedarbird, finch, grosbeak, grouse, robin, sparrow, woodpecker.

SNOWBERRY AND INDIAN CURRANT (Symphoricarpos) finch, grosbeak, jay, junco.

SUMAC (Rhus) for blackbird, bluebird, cardinal, catbird, cedarbird, chickadee, crow, grackle, grosbeak, grouse, jay, kingbird, quail, robin, sparrow, swallow, thrasher, vireo, warbler, woodpecker.

THORN (Crataegus) for crow, grouse, jay, robin.

VIBURNUM (any variety except americanum) for bluebird, cedarbird, crow, grouse, quail, robin, sparrow, thrasher, warbler, woodpecker.

WINTERBERRY (Ilex verticillata) for bluebird, crow, quail, robin, woodpecker.

III. EVERGREENS THAT FURNISH FOOD

AMERICAN HOLLY (Ilex opaca) for bluebird, crow, quail, robin, woodpecker.

BURNING BUSH AND SPINDLE TREE (Evonymus) for bluebird, robin, sparrow, woodpecker.

CANADIAN HEMLOCK (Tsuda canadensis) for crossbill, grosbeak, siskin.

RED CEDAR (Juniperus) for bluebird, cedarbird, chickadee, finch, grosbeak, kingbird, phoebe, quail, robin, sparrow, thrush, warbler, woodpecker.

WINTERGREEN (Gaultheria procumbens) for cedarbird, finch, grosbeak, junco.

EDITOR'S NOTE: *It is manifestly impossible in the limited space at our disposal to tell the reader all he might care to know in this connection, but anyone sufficiently interested to investigate further on his own account will find the books listed on page 116 reliable and very accessible sources of information.*

GETTING THE BEST BLOOM FROM THE BULBS

HENRY GIBSON

Insuring Your Lilies, Daffodils, Tulips, Etc., Against Winter Loss — When, How, and What to Plant

THE ease with which the hardy spring-flowering bulbs may be grown; their wonderful adaptation to diverse conditions; the fact that they bloom at a season when the passing of winter makes their gay colors irresistibly attractive; all these things justify the enthusiasm felt each fall as bulb planting time comes round. There is indeed no other class of plants which will produce such results with so little labor and so little knowledge of plant culture.

While it is to the Hyacinths, Tulips, and Daffodils that we must look for the most gorgeous part of the spring display, there is yet a modest charm about the Crocus and Snowdrop, during the earliest days of spring always appealing to the flower lover. Massed in solid beds which have been occupied with annuals during the summer, or are so destined for another year; in borders in conjunction with hardy perennials; in the rockery; in sheltered nooks among shrubbery; or in broad irregular patches on the edges of the woodland, bulbs will afford a profusion of bloom until well into June; and, by adding suitable Lilies, the display may be carried through the summer until it is time for the succession to be taken up by the tender flower-roots and other later flowering things.

WHAT TO DO WHEN PLANTING

1. Plant as early as possible so that root growth may be made in the declining warmth of fall.
2. Dig the bed at least 18 in. deep, and on wet soils provide drainage by a layer of dry, broken rubble, etc.
3. Work the soil till it is mellow with every hard lump broken and pulverized.
4. Use only thoroughly decayed manure, *if at all;* fresh manure is positively injurious. Bone meal is safe.
5. Do not "hang" the bulb, but see that it rests firmly on and in the soil. Use sand for the bottom in heavy soil.
6. Cover with soil to a depth of one-and-one-half times the size of the bulb. Thus: Tulips and Hyacinths 4-5 in.; large Daffodils 6 in.; Crocus, Snowdrop, etc. 2 in.; Lilies 8-10 in.
7. Mulch newly planted bulbs *after* the ground is frozen—*to keep things cool.*

TO MAKE A BULB BED

It is worth while to make the bed fit to receive the bulbs. Throw up the soil, and let it remain exposed to air and sunshine until it will crumble readily under the hoe or rake. Work it over until it is *as fine and mellow as it can possibly be made.* Do not be satisfied until every hard lump is broken up. Then, and not till then add liberally *well decayed manure,* such as is had from an old hotbed or mushroom bed, and thoroughly mix it with the soil. Use one part manure to three parts soil. If there is any doubt at all as to the manure being well decayed it is better to omit it altogether and use bone-meal instead. Fresh manure coming in contact with bulbs is positively injurious to them. Yet it must be remembered that they desire nutritious soil. After preparing as described, level off the surface and leave the bed to settle for a few days before planting.

What They Really Like Best

ALL bulbs like a mellow, rich, and well drained soil. They *will not flourish in wet, heavy soils,* where a great deal of moisture is likely to be about their roots. Many Lilies are adapted for, and so do best in, damp low-lying places on the edge of woodland, and among shrubbery; but even with them *ample drainage* is essential to their welfare. Therefore choose a naturally well drained place for bulbs; or set about providing a means of escape for surplus water by excavating the ground to the depth of eighteen inches at least (two feet is better) and filling in the bottom with a six inch or more layer of broken bricks, stones, old cans, in fact *anything that will not decay* readily, and allow the soil above to settle back to its former hardness, and thus become as impermeable to water as it was before any thing was done to it. Failure is a foregone conclusion if the bulbs have to stand with their roots in cold wet mud at a time when active healthy growth ought to be taking place.

Really it is impossible to give too much attention to this part of the soil preparation, the result of neglect is seen in failure of the bulbs to bloom, and their entire disappearance in a year or two.

THE IDEAL PLANTING TIME

During all October, and early November is the best season for planting bulbs in the open ground. An impression that all that is really necessary is to get the bulbs into the ground before cold weather comes often leads to delaying planting to a later time. But just think that before blossoms can be produced the bulbs *must make roots*—but not top-growth—for the support of the new growth in the spring. This they can do if planted early, and in the spring be able to do the work expected of them. Late-planted bulbs do not have time to form these roots before the freezing weather puts them to rest, with the consequence that they have a double duty to perform in the spring; and failure to give good results is the natural result of requiring too much. See that the bulbs are planted as soon as possible after the soil has been prepared for them.

The Required Depth and Distances

A SAFE general rule when planting bulbs is to cover them one-and one-half times their own depth. Ordinary sized bulbs like the Tulip, and Hyacinth, should be planted from four to five inches deep; smaller ones like Crocus, and Snowdrop, about two inches deep; and large bulbs of Narcissus six inches. Lilies require deep planting, as many of them emit roots from the stems, which eventually anchor and support the plants, hence from eight to ten inches below the ground surface is not too much.

When planting is shallow the action of frost is sure to "heave" some of the bulbs breaking many of the roots, and may bring about such a disturbance as to seriously and permanently injure them. Covering with litter in November will, of course,

do much to prevent injury of this kind, but it *does not justify shallow planting.* Too early covering during a mild fall is likely to excite top growth into action only to be damaged later by hard frosts.

Nor is it enough after going to great pains to prepare the soil for the bulbs to take a trowel or dibble, and simply make a hole and push in the bulb, cover it up, and expect a dainty spike of bloom. For small bulbs, this practice may be all very well, as they can readily be pushed into contact with the soil when planting, but in the case of Tulips, Hyacinths, Narcissus, etc., it not infrequently happens that an air space is left between the bottom of the hole and the base of the bulb—and the bulb is "hung."

In a square or an oblong bed begin at one end making a trench the requisite depth, for the particular kind of bulb to be planted. Into this place the bulbs at proper intervals, i.e., four inches for Tulips, six for Hyacinths and Daffodils, and six to twelve inches for Mammoth Narcissus. When that row is completed start another trench six inches from the first, using the soil from the second trench to fill up the first and so on until the whole bed is planted; the last trench being filled in by raking the bed over level. In a round bed it is good practice to start in the centre and work in the same manner, in circles, or if preferred in straight lines across the bed.

The centre of a round bed may be a little higher than at the sides, yet the slope should not be sufficient to carry water to the outside of the bed. In heavy soils a layer of sand placed in the trench and the bulbs planted on it is of considerable benefit, providing drainage from the base of the bulbs.

For the Rock Garden

JUST any bulbs will not do for the Rock Garden, which is on such a diminutive scale, comparatively speaking, as to require quite special types of plant material. Large Daffodils and gorgeous Tulips are entirely out of their element here. Choice must be limited to the small Daffodils, Tulips like T. Clusiana, Crocuses, the tiny wax-like Lilium tenuifolium, and to Scillas, Chionodoxas, and Snowdrops if they are available. Narcissus minimus is among the tiniest of the Daffodils and one of the earliest to flower. Then we have N. Bulbocodium, N. cyclamineus, N. minor, N. moschatus, and others. These are for sunny nooks and corners where they will be safe from rough winds. Planted in bold groups, with a ground cover of some creeping plant, or clean gravel to guard them from spattering mud, these miniature members of the Narcissus family are worthy of more than passing mention.

Small Tulips planted in the rock garden should be permanent, as they dislike annual or even an occasional lifting and drying off. T. Clusiana requires a warm position and protection in winter in cold climates. Another desirable member of the Tulip family is T. persica, which usually carries two warm yellow blossoms on a five inch stem in late spring. T. sylvestris, known as the British Wild Tulip is also desirably qualified for a place in the Rockery. It requires a whole season to become established before flowering. The flower stem grows about six inches high and curves gracefully under the weight of the bronze bud which develops into a yellow, violet-scented blossom.

Other small tulips that may be left to themselves and will increase in beauty year by year are T. saxatilis, T. australis, T. linifolia, and T. praestans.

TULIPS IN INFORMAL EDGING

The variety Picotee, opening white, edged pink, and gradually becoming pink all over was used in this border in The Garden Magazine gardens. It is early flowering and useful also for indoor decoration

The More Popular Bulb Families

PLANT Crocuses in great irregular patches, in separate colors, starting with, say, purple, softening to lavender through the striped ones to pure whites, and on to the burning yellows. They grow and increase wonderfully in grassy places, and nowhere show to better advantage, but the planting should be free and natural. A good way to secure this effect is to take the bulbs in a basket, and walking over the ground to be planted throw them in broad sweeps, and plant them where they fall.

Ribbons of crocuses running through the garden borders are often effective. They should be planted close to the edge, and they will be free from disturbance if Sedum album is planted over them. This close, creeping little succulent prevents corms from being heaved out by the frost in winter, protects them from mud splashes in spring, and in summer spreads a flowery covering over the space they occupied.

They may also be used to advantage under large trees, in conjunction with Myrtle, the latter hiding the dying foliage of the corms as they pass out of bloom.

Hyacinths have long been used for planting in masses in geometrical beds and so successfully do they

IN EARLIEST SPRINGTIME

Snowdrops planted in a natural manner in grass at the foot of a tree. Often they show their flowers while the snow yet lingers and mark the earliest days of outdoor gardening. A hundred or so bulbs are shown in the planting

fill the rôle of bedders, that they are seldom seen in any other position. Nevertheless they are perfectly at home and look the part when planted in irregular drifts along the edge of shrubbery, or in the hardy border, in conjunction with such other spring flowering plants as Myosotis, English Daisies, Pansies, Wallflowers, Arabis, Aubretia, etc. Even the geometrical bedding out of Hyacinths may be made much less stiff and formal if the bulbs be placed nine inches apart, and the space between filled with spring flowering plants that bloom at the same time. A bed of pink Hyacinths and blue Forget-me-nots has something more than the commonplace about it. Or dark blue Hyacinths and pink English Daisies, white Hyacinths with Forget-me-nots, light blue with golden Alyssum, yellow Hyacinths with purple Pansies, are particularly happy combinations.

NOTHING can equal in brilliancy or richness of color a bed or border planted with a mass of gorgeous Tulips, showing their full beauty during April, and onward into June. It is one of the most striking in the whole host of garden attractions. The single Early Tulips have a charm all their own, which is accentuated when they are used to outline the quaint patterns of beds and borders or to fill with color the squares, circles, and crescents cut in green turf, if such be the style of bedding fancied.

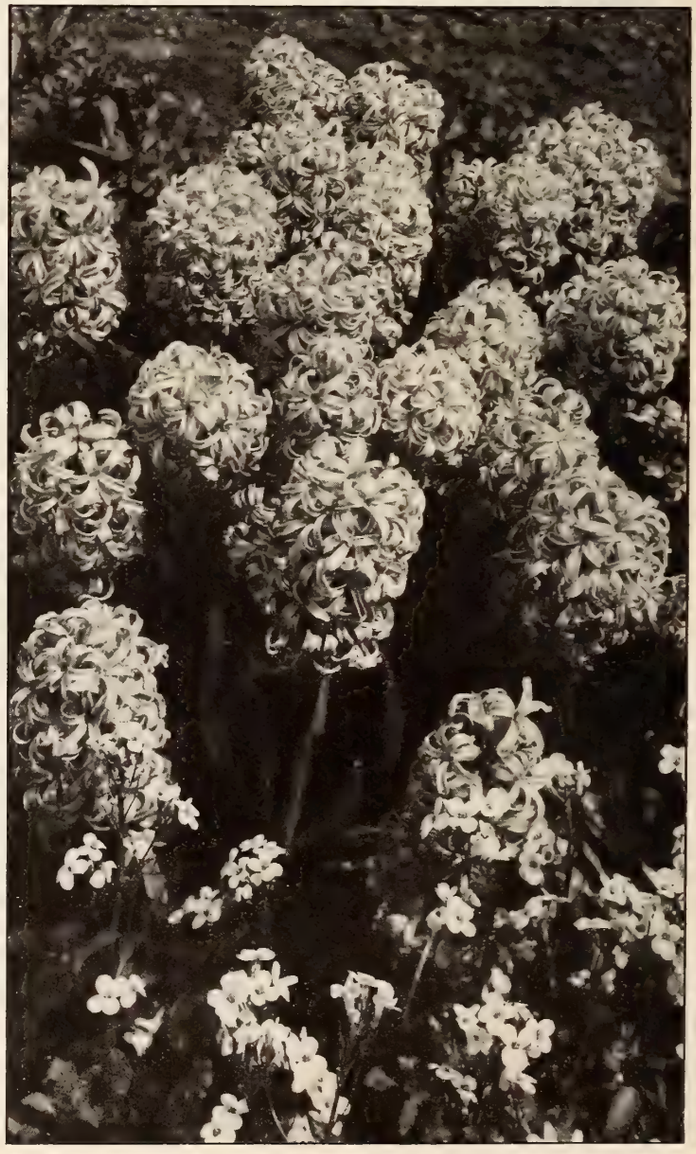
Variety may be added by including some of the double early flowering varieties in the more exposed parts of the garden for which the later flowering and taller varieties are unsuitable.

The aristocrats of the Tulip family, however, are the May-flowering kinds which include the Darwins, Breeders, and Cottage types. There is considerable difference in the general appearance and habit of these groups. The Darwins are distinguished for the beautiful blendings of several nearly related color tones; rose, lilac, lavender, heliotrope, gray-violet, and scarlet being most predominant. Yellows are entirely absent. The stems are tall and strong and the flowers cup-shaped, or globular and of fine substance.

The flowers of the Cottage section are long and slender, the segments narrow, often pointed, and reflexed. Stems are long, slender, and willowy. Their general effect is as distinctly informal, as that of the Early Tulips is conventional and prim. Their pure clean color is a conspicuous quality, running from

THE PERVASIVE FRAGRANCE OF THE HYACINTH

Usually employed in formal effects because of a certain inherent stiff formality of its own, the Hyacinth yet lends itself to combination in the border if planted in irregular mass. Its penetrating, sweet fragrance is a quality not to be forgotten or ignored



USING BULBS IN MASS PLANTING

How different from the conventional method of formal figures and exact quantity. Used naturalistically in massed beds bulbs may fittingly be introduced into the most informal groupings

gleaming white, to blush, and pink, to rose-scarlet, vermilion, deep orange, and tawny hues.

To describe the Breeders is almost impossible. They must be seen to be appreciated; but briefly they are self-colored, often shaded. In height and size they frequently surpass the Darwins, which in fact are a strain of breeders without any yellow.

The self-colored flowers, are generally dull-toned or bronze-shaded, and many of them deliciously scented. Colors without a counterpart in any other class of Tulips are to be found among them, as well as combinations of color scarcely to be imagined by those who do not know the possibilities of the Breeders.

Their quiet tones in contrast with the livelier color of the Darwin and Cottage types, give a feeling of rest and repose to those who are sensitive to color in the garden atmosphere. Breeders eventually "break" into fancifully colored flowers more or less striped or splashed.

There are so many divisions and varieties of Narcissus or Daffodil, that it would be futile to attempt to describe even a small part of them, and besides the Daffodil was abundantly presented in last month's GARDEN MAGAZINE. Suffice it to say that all have some merit, and are desirable for garden decoration.

The best general soil for them is light and rich with good drainage. The Poeticus, and Burbidgei varieties, most of the Star or Incomparabilis section, and such strong growers as Emperor, and the Large Trumpet Bicolor will flourish in a fairly strong, moist loam. The White Trumpet Daffodils and the smaller kinds require a turfy loam, yet without too much humus. In general Narcissus enjoy a fair amount of sunshine, but like to be shaded for part of the day. The white varieties especially enjoy shade.

They enjoy particularly growing in grass, and look exceedingly pretty when planted under trees, or around shrubs, on lawns, on the top of grassy banks, or along woodland walks. Many fine varieties that do not succeed in the garden beds and borders succeed admirably in the grass. When set out in the grass the arrangement should be as free and natural as if nature had done the planting—in drifts, by preference.

Considering the Lilies

SUCCESS with Lilies depends to a great extent upon the selection of proper varieties, and giving them the best possible conditions. While many species demand special conditions for their welfare there are many that will thrive under ordinary garden conditions. Failure is nearly always to be traced to a lack of understanding of the requirements of some particular species, for as a matter of fact no garden is so poor or so moist or shady but that it will successfully grow at least several species. Although all Lilies may be said to enjoy some shade, yet many if given protection about their lower leaves will thrive very well in sunny places. When planting among other plants, take care that their neighbors are not of the rapidly spreading, and strong growing types, for the Lilies resent being crowded.

The soil for most Lilies (save the marsh dwellers) should be made up chiefly of fibrous loam, leaf-mold, and sand; and this should extend to at least eighteen inches to two feet in depth, good drainage being of course essential. As a further precaution give a cushion and covering of clean sand, to drain away any superfluous water, and at the same time keep the bulb properly moist.

The depth of planting varies not only according to size but according to the habit of growth; i.e. whether they send out fleshy perennial roots from the base of the bulb only, or are stem rooters in addition. The former (of which we have a good example in the Madonna Lily) do not require deep planting, about twice the depth of the bulb being sufficient, nor does this Lily demand rich soil.

Most Lilies, however, have the stem rooting peculiarity. These roots are vital to the health of the plant, and if they are dried up, or otherwise injured badly the result will be the loss of the bulb. Among the better known stem rooting kinds are

auratum, regale, philadelphicum, sulphureum, speciosum, and longiflorum, which all require deep planting.

And Then the Mulch

WHEN all planting has been completed and the ground has frozen for two or three inches, it is time to put on a mulch of marsh hay or long strawy manure. This is *not to safeguard them from cold but from the alternate freezing and thawing*, which tears and injures the roots, and often heaves the bulbs out of the ground completely. A covering of strawy material put on early in winter is likely to attract mice, which will eat the bulbs. Better wait until mid-January. Thus they are secure until the ingratiating sunshine of spring incites the dormant shoots to issue forth and greet another season of flowers.

WHERE TULIPS ARE THE GARDEN'S FEATURE

Planting them in a solid mass around the garden, yet each variety by itself, the connoisseur gives the tulips a background of shrubbery foliage which also carries interest after the bloom is done. Iris in clumps afford a foreground relief

IF YOU ARE GROWING FRUIT

E. I. FARRINGTON

IF YOU do not have at least a berry patch and even one tree each of a couple of the orchard fruits you are missing half the joy of owning a garden, and it is high time to mend your ways.

It is not essential that the tree fruits be put into an orchard; they may be used as part of the ornamental planting in shrubbery or screen and so serve a dual purpose. All the world agrees that fruit blossom time is the climatic effect of spring. So plant fruits for use and beauty both, and do it now! Fall is the ideal planting season.

Checkmating the Peach Borer

IF YOU are growing Peaches acquaintance must be made with the jaw-breaking name paradichlorobenzene [How about "paraben" for short?—Ed.], which (in spite of the difficulty in pronouncing it) will soon be known the country over. It stands for a white crystaline solid, three quarters of an ounce of which, placed in a ring on the soil around a Peach tree, releases a gas which seeps down and kills the borers. The borer, which works out of sight and often does a vast amount of damage before its presence is discovered, has long been the peach grower's arch enemy. Every spring and every fall it has been necessary to go over the Peach trees, looking for the tell-tale mound of dust at the base, and then probing the hole in the tree with a pointed wire, or digging out the pest with a sharp knife. It was a bothersome job, so that this new and simple remedy, which promises to be almost one hundred per cent. effective, will be enthusiastically welcomed.

The crystals are inexpensive. Three cents' worth will be enough for each tree, and not more than an ounce should be used. There is no better time to apply the chemical than in the month of October, although it can be used effectively again in the spring. The method is simplicity itself. Clear a level space on top of the soil six to twelve inches wide about the base of the tree, without disturbing the soil crust any more than necessary. The crystals should make a ring exactly an inch away from the tree. Throw several shovelfuls of earth over the crystals so as to make a compact, cone shaped pile. Use fine soil at first, applying carefully so as not to disturb the crystal ring.

Of course there are some things yet to learn about this new treatment first used by E. B. Blakesly, an Ohio farmer, and since tentatively commended by the Department of Agriculture, and it is best tried in a somewhat experimental way at first. One fact has already been discovered, that paradichlorobenzene must not be used for very young trees; if trees are six years of age or older, no harm is likely to result. It is well to remove the crystals after two or three weeks, by which time they will have done their efficient work.

CUTTING OUT BLACKBERRY CANES

A handy and effective tool which saves the gardener's time, preserves his temper, and—incidentally—improves his vines

THE INDISPENSABLE SPRAY PUMP

Proper equipment is worth while from every point of view and an easily managed spray pump seems a necessary feature of even the smallest outfit

Blueberries In Your Own Garden

WITHIN a few years it will be quite natural for every garden to have a few Blueberry bushes in some odd corner. The taming of this excellent berry has been going on apace, and both size and quality of the fruit have been greatly improved under

RASPBERRIES MULCHED AND READY FOR WINTER

Whether you decide upon Latham, La France, St. Regis or some other preferred sort of Raspberry, a good mulching down with straw, leaves, or some similar protective material after the first heavy frost will prove a wise provision

cultivation. The reason why the Blueberry was not long ago brought into cultivation is that people tried to handle it in the same manner as domestic farm fruits, without a proper knowledge of its marked eccentricities. Both lime and manure have been applied to Blueberry bushes transplanted to the garden, with the result that they soon died, for those are two things which the Blueberry definitely abhors. Blueberries thrive in acid, sandy soil.

Blueberry plants can be transplanted readily if properly handled, the fall or early spring being the best time to do the work. It is important, though, to select good plants, and wild Blueberries vary to a far greater extent than might be supposed, and the selected cultivated varieties now offered are vastly superior to the run of the wild plants. All Blueberries are not blue, some being black. Then there are plants which are very unproductive, while others yield heavily. Some plants ripen early; others very late. If a careful selection be made the blueberry season can be greatly extended by using both kinds.

Which Raspberries and Why

UNDER its new name the Latham Raspberry, formerly the Minnesota No. 4, is proving its worth in the East as well as in the state which gave it birth. Grown in association with several other Raspberries in New England, its performance is highly pleasing. In fact, I am about ready to discard all varieties except Latham and La France, but will keep St. Regis until I get a larger plantation of La France; but so far as I can judge the latter is the better, being larger and more prolific.

One good point about the St. Regis berry is the fact that it gives a crop ahead of all other kinds in the spring. I am eating raspberries at least a week sooner than any of my neighbors. On the whole, though, I am sure that La France is going to prove enough better to supersede it. Erskine Park has a very straggling habit; the berries are not large, and its spring crop has never been at all satisfactory to me. Yet I have never seen a Raspberry which has so many berries on the canes in the fall, ripening as early as mid-August, being produced not only on the tips, but at the axils of the leaves up and down the stems for nearly two feet. When in full fruit, a planting of Erskine Park is a remarkable sight. The plants must be supported, however, and require more attention, I find, than other kinds.

The Latham, which was created to meet the severe weather conditions of Minnesota, is an ideal Raspberry in many ways. It seems absolutely hardy; the canes grow sturdy and erect. The fruit is large, well flavored, and hangs to the stems a remarkably long time. No more can be wanted in a Raspberry, either for home use or for shipping.

Handy Helps to Pruning

IT IS impossible to have success with Raspberries unless the plants are kept properly thinned out. A small hoe with a V-shaped blade makes a very good tool to use in a berry patch, especially if it has a handle not more than three feet long. With such a tool it is easy to cut out the old canes and the surplus growth without undue labor. Sometimes long handled pruning shears are useful, too, and of course there must be hand clippers for shortening back the canes that are left. It pays to have all the tools sharp so that the canes will not be pulled and torn.

When it comes to pruning the Blackberry plantation (which requires even more attention) the pruning shears often prove very convenient as the canes are large and stout. There is a new tool on the market which has been found useful, although not designed for this purpose. It is a tree pruner which has a sharp blade resembling a carpenter's chisel mounted on the end of a stout handle which moves back and forth in a deep wooden socket. The blade is placed against any small limb to be removed. Then the socket is thrust violently against the handle, when presto, the limb shoots into the air! When a little skill has been acquired this tool can be used to great advantage, especially in cutting out branches not easily reached from a ladder. It is a splendid tool for severing stout Blackberry canes at the surface of the ground, as with it these canes can be cut off without bending back, and without necessitating intimate personal acquaintance with the sharp spines on the canes!

An Easily Managed Spray Pump

SPRAY pumps are of many kinds, but this year for the first time I have found one which is really satisfactory for use about the home grounds. It consists of a straight nozzle attached to a hose resting in a bucket. The nozzle is in two pieces, one of which works over the other. A powerful spray or steady stream is obtained by working these two sections back and forth, an easier process than manipulating the handle of a pump. With this little device one can spray all the bush fruits and all ordinary sized fruit trees, too. In fact, it is the only spray pump which the average garden maker will need.

Protecting the Plums

THE reason why the man with a few Plum trees often fails to get a satisfactory crop is that he doesn't thin the fruit. Plums need thinning fully as much as do peaches, but they are usually allowed to hang in dense clusters, regardless of this fact. As a result it is impossible to spray them properly. The plums remain damp from rains and dews, and brown rot soon develops. This brown rot, plus the curculio, does most of the damage which makes the plum crop a failure. The rot will be prevented to a large extent by thinning the clusters so that the plums will not touch even when ripe. This simple operation will give a good yield of plums from trees which have been considered worthless. It is often a drastic operation, requiring the removal perhaps of more than half the set. The gardener cannot easily nerve himself to the task; but having once succeeded, he will keep on thinning his plums as a matter of course.

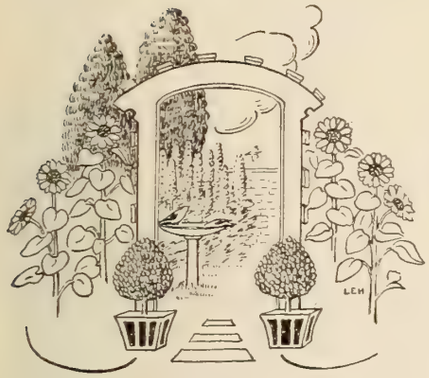
Thinning should be supplemented by spraying when the plums are about half grown, repeating this spraying if a period of damp weather follows using self-boiled lime sulphur or bordeaux mixture, preferably the former, but the commercial preparations are more convenient.

While the plum curculio does not destroy the plums like the brown rot, it disfigures them and does much damage. The curculio has been much in evidence the past season. It makes a crescent-shaped cut on the fruit, from which a little gum often exudes. Much can be done to get rid of the plum curculio by burning over the grass and weed patches around the trees in winter. Another old-fashioned but effective plan is to spread a large cloth under the trees and give the trunk a sudden jar with a pole muffled with cloth to prevent its injuring the bark. The jar which the tree gets causes the curculios to fall down upon the cloth, when they can be gathered up and killed.

One thing which can be done right now to ensure better plums next season, is to look over the trees and pick off all the mummied fruits. The fungus of the brown rot lives over winter in this fruit, either on the tree or on the ground, and if burned or deeply buried, a long step is taken toward eradicating the trouble.

GARDEN BIRDS

LOUISE DRISCOLL



I WILL plant larkspur for the humming birds,
And sunflowers for the goldfinches. I'll set
A little dish of water in the shade
And watch the birds come—orioles like flame
And little juncos with white tail feathers,
Small, friendly, Quaker birds! That mocking laugh
Is a bright flicker hunting ants. He calls
To bring his mate down. Do you see his moons?
Black crescent on his throat and red behind
Set well upon the top of his proud head—
A bold, gay bird.

THERE are so many warblers I can't tell
One from the other always, but I know
Green, golden gleaming in the cherry bloom!
There's a blue throat or a gray cheek sometimes,
And song like that lost pipe that Ganymede
Dropped as he rose. Perhaps a warbler found
That last low note and caught it as it fell.

I THINK the singing angel Israfel
Teached the birds to sing. I know they come
Through rainbows to my garden, for their wings
Are stained with seven colors. Every one
Seeks out a special blossom that he loves.
I've seen an oriole on a blossoming peach
Gold on the rose inlaid and honey mad!—
Draining flower after flower; and there's a wren
Sings all day long above the clematis.

THESE are my friends. Theirs is my garden grace.
For them I plant larkspur and sunflowers
And set a dish of water in the shade.
I like to think that when my soul is free
It will lift radiant wings and fly to flowers.
I hope I'll find a garden red and white
And gold and amethyst and dusky green,
With a blue, shallow pool and an old dial
To mark the sunny hours.

THE TERRACED WALK WITH HERBACEOUS BORDER

ABOUT twelve to fourteen acres in extent, the only level ground being a strip at the base of the hill slightly more than an acre in area and perhaps fifty feet wide extending the full length of the property. The ground then rises steeply to an elevation of about six hundred feet.

The house (designed by Janssen & Abbott of Pittsburgh) is situated in the middle of the property and approximately two-thirds of the way up the hill, a cut having been made in the side of the hill to accommodate it. Behind is a high, heavy retaining wall; and in front are two terraces held in place by masonry. A winding road which crosses the property three times and has a maximum grade of ten per cent. leads to it.

A very considerable amount of the original forest timber is still standing; in front of and under it Rhododendron maximum has been abundantly planted. One boundary is open for half its length and is planted with the conventional, mixed, deciduous, massed border. Hemlock has been much used, particularly on the east boundary and in one of the two ravines which cuts the property. Through the other runs a stepping stone walk; along the sides of this ravine English Rhododendron has been thickly grouped, and at the upper end Hemlock is established, monotony being avoided by the use of a few Spruces and Junipers.

The twenty-foot wide, level, grass terrace in front of the house is flanked by a herbaceous border about six feet broad and perfectly straight. This is held in place by a wall, at the bottom of which is a grass strip, a walk, and a second herbaceous border similar to the first and also held in place by a retaining wall. These walls are perhaps eight feet high; the retaining wall at the rear being about twenty; all are covered with Evonymus radicans vegetus.

To the southwest of the dwelling there is a comparatively level stretch, an acre in extent, where an informal or English garden has been introduced, simple in treatment and planting, principally for the reason that—being entirely surrounded by large Oaks—only limited areas of open ground were available.

SWEEP OF LAWN WELL FRINGED WITH ORIGINAL FOREST TIMBER

GARDENS

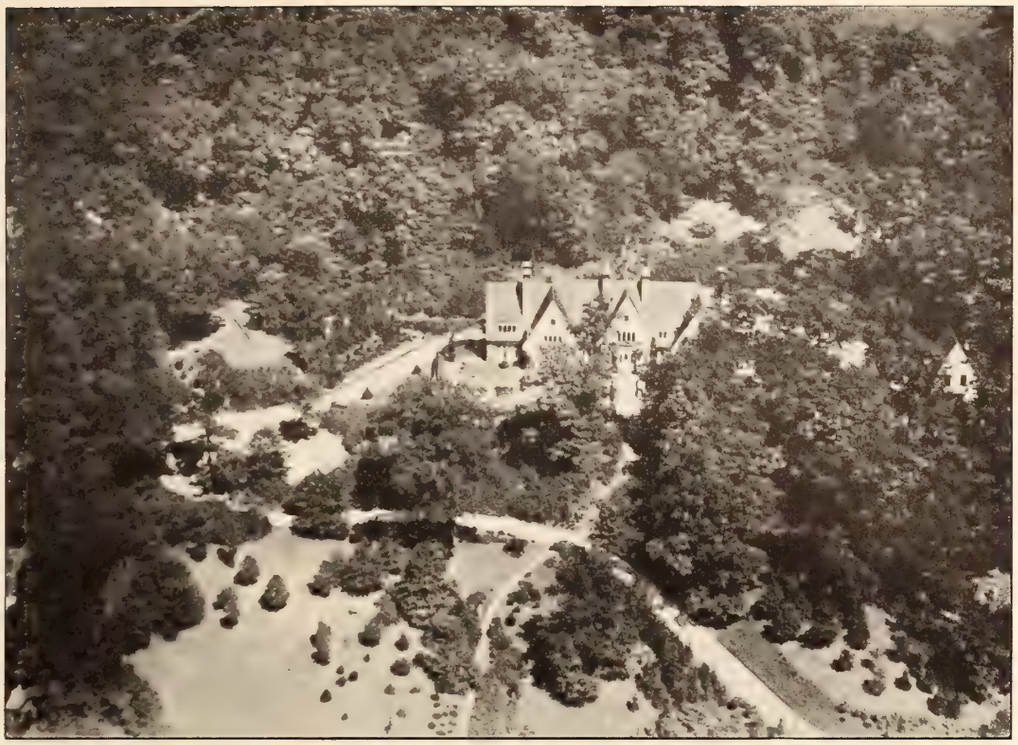
of

Mr. E. A. WOODS

at

SEWICKLEY
PENN.

ELLIOTT & ELLIOTT
Landscape Architects



AS SEEN FROM AN AIRPLANE

COMFORTABLY SETTLED IN ITS HILLSIDE NICHE WITH SUPPORTING TERRACES

WINTER HOUSING FOR ROOTS AND BULBS

CHARLES OLIVE

Attention to the Old Roots After the Killing Frost

IT IS necessary, of course, to give the flower bulbs and roots some attention in the fall. Cannas and Dahlias should be taken up immediately after their tops have been blackened by the first frost. Cut off the tops about two inches above the ground, and dig out the roots carefully so that they do not get bruised. As you dig them up, label each clump, and you will be able to tell next spring just what you have to plant. Let the roots dry for a few days in the sun, and then deposit them in slatted boxes through which the air can circulate freely. The boxes, when ready, should be placed in a reliable vegetable cellar. Dahlias will not stand so much cold as Cannas, but they will be safe in a place where the temperature hovers around thirty-two degrees.

Gladiolus are much hardier than either Cannas or Dahlias, and often, if the weather is not too cold, they can be left in the ground till the first light snow comes. When digging them up, one should be careful to get all the bulblets and small, hair-like roots that have formed around the old bulbs. Each large bulb, with its cluster of rootlets, should be lifted entire and placed on a handler, which can be made from an old pail provided with a wire screen bottom. If the bulbs are gently shaken in this receptacle the dirt will filter through, leaving the roots clean. Each variety should be labeled and placed in a separate box to dry thoroughly, after which the roots can be put in paper bags and kept where no frost reaches till spring.

Tuberous Begonias are delicate bulbs, easily damaged by cold, therefore they must not be neglected in the fall until a hard frost comes. They should be taken up *before* freezing weather arrives, and placed in a shed where they are safe from frost, and where there enters plenty of sun and air. It is best to leave half of the tops on, but when these become dry, they should be removed, and the bulbs packed in wooden or paper boxes filled with clean, dry sawdust. Here they will keep in good condition till they are ready to start in the spring. The boxes should, of course, be kept in a dry place where it is not too cold.

WINTER QUARTERS FOR TENDER PERENNIALS, ETC.

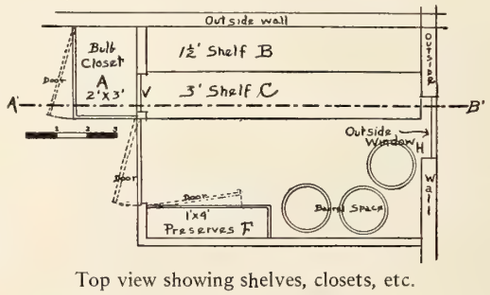
CARL STANTON

HOW many times we hear it said: "If I only had some place where my tender flowering plants and vegetables would really keep, I would raise so many more of them." Yet it is really an absurdly simple thing to winter over your tender perennials and to keep your vegetables in good eating condition if only you plan ahead to have a proper place to store them.

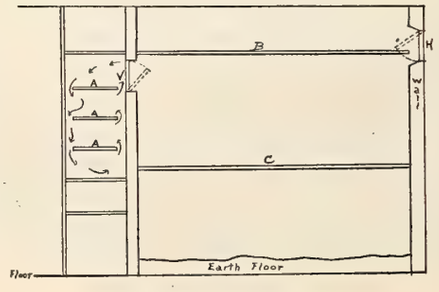
Let me describe a storage room that has brought all kinds of pleasure to the owner, who has not even yet found out all that it is capable of carrying through the winter. The room proper is in a furnace-heated basement, built into the north corner, the farthest from the furnace. It is 7 x 9 ft., and is built of $\frac{7}{8}$ inch boarding (preferably matched), nailed to 2 x 3 inch uprights, placed $2\frac{1}{2}$ or 3 ft. apart. Heavy building or roofing paper is used against the boarding to make the room less susceptible to the heat of the cellar.

Against the outside wall on the longer side is a 3 ft. wide bench (C on accompanying diagram) 3 ft. from the floor; and over this, down about 2 ft. from the ceiling is an 18 in. shelf (B). On the opposite side of the room is a case (F) 4 ft. long, 1 ft. deep, and tall enough to contain the family preserves. The rest of the floor space is allotted to barrels. Built outside of this main closet is a small one, 2 x 3 ft., reaching to the ceiling, with three of its shelves made so that the air can circulate around the front and the back. There is a ventilator opening from this room to the large one, to be used in case the small one becomes too warm.

AN IDEAL STORAGE ROOM



Top view showing shelves, closets, etc.



Cross section on line A' B'

If the floor is made of cement, cover it over with 4 or 5 inches of earth kept slightly moist by watering occasionally. The door is made 3 ft. wide to allow for wheeling boxes in on the wheelbarrow. The window is either painted black, or covered with cloth to exclude the light. It can be fixed so as to be opened or closed at will from the outside cellar without the bother of going into the closet. To aid in doing this, a slit is cut in the door, covered with glass, and a thermometer placed inside. This thermometer should read about 40° F., which will be a generally safe temperature—neither too cold nor too warm.

Many plants can be kept perfectly here that usually have to be started from seed each year. Try it with Snapdragons, or any of the plants listed in the catalogues as being "half-hardy" perennials or annuals, or even some of the tender perennials. Be careful to start them slowly in the spring, by placing them in a light place, giving a temperature of 50°, and watering slightly.

Started this way you will have Snapdragons that can be put out by May 15th; and you will have them hardier, larger, and in greater profusion than it is possible to get from seed; also you can have them all the same shade, by using a little judgment in the selection of the plants to be stored. If you have a coldframe, hotbed, or a greenhouse, the plants can be potted up March 1st; treated as above; and by April 15th you can be cutting blooms for your house.

STORAGE CHART FOR TENDER FLOWER-ROOTS AND BULBS, VEGETABLE CROPS, ETC.

ARTICLE	PLANTING DATE	STORING DATE	TEMPERATURE	WHERE PUT	METHOD OF STORING
Beets Carrots Turnips	June 15 June 1 July 15	November 1	35°–40°	Shelf C	In boxes; putting in alternate layers of vegetables and sand; cover with sand and burlaps.
Onions	April 5	Dry after ripe in dry place. Store Oct. 15	35°	Under Shelf C	Small onion crates, or crates made of wooden frame, covered with chicken wire Cut sprouts.
Potatoes	May 1	At maturity	35°–40°	Shelf C	Boxes not more than 1 bushel.
Pumpkin, Squash	June 1	At maturity	40°	Shelf B, or Closet A	Spread on shelf.
Apples		Before freeze	35°	On Floor	In boxes or barrels.
Tender Waterlilies	May 15	Before freeze	35°	On or under Shelf C	Dry tubs and lay on side. Start watering slightly Mar. 15.
Tender Roses	May 10	After 2nd light frost	35°	Under Shelf C	Tie in bunches, bury roots 3 inches or stand in boxes. Water to keep barely moist.
Hydrangeas	May 15	After 2nd frost	35°	On floor	Dry tubs about October 1st.
Dahlias Cannas	May 10	Dig after tops are dead, dry 24 hours	35°	On floor	Leave 2 ft. stalk on bulbs; stand upside down in barrels; cover with burlap, or place upside down in dry sand or ashes.
Snapdragons Chrysanthemums	Inside Mar. 15 Outside May 15	Before heavy frost	40°	Shelf C	Store in boxes; cover roots 3 inches; do not let dry out, but will rot if too wet.
Tritomas	May 15	Oct. 15–Nov. 1	40°	Shelf C	Same as above; except moister.
Tender Ferns in pots Asparagus	Out May 15	Before frost	40°	Shelf B	Lay pots on side and keep dry. Start inside any time.
Begonias, Gloxinias Tuberoses	Inside Mar. 1 Out May 25	Before frost	45°	Bulb Closet A	Store in dry sand upside down. If in pots, dry and lay on side.
Gladiolus	May 15	At maturity	45°	Bulb Closet A	Store in flats and cover to prevent drying.

GOOD RESULTS FROM FALL PLOWING

E. V. LAUGHLIN
Lenox College, Iowa

EXPERIENCE has taught me that late fall is the best time to plow or dig next spring's garden. The winter's freezing has a wonderfully mellowing influence upon the soil. Examination will show that a fall plowed garden is entirely free from underground lumps and clods, and that there is a complete absence of pockets and air spaces so common in newly plowed ground. And, in addition, such ground is ready to plant just as soon as the weather will permit.

Fall plowing gives an unusual opportunity to fertilize well. My own practice is to cover the ground entirely with well-rotted but unleached manure and then to plow it under. The four or five months of wetting and freezing will disintegrate and thoroughly mix this manure with the soil. After plowing, fresh manure may well be scattered over the surface. The rains will leach the substance from this manure carrying it down to the humus provided by the plowed under manure. Treated in this way a garden soil may be charged and sur-charged with the nutrients required in growth. Next to thorough cultivation an exceedingly rich soil is the secret of a fine garden. Size, quality, tenderness, flavor, in fact every good quality in garden produce, is mainly the result of feeding the plants well. In my judgment the method I have described is the best way to make a garden soil rich.

It is best not to harrow the newly plowed garden. And by all means it should be kept free from any kind of tramping as this compacts the soil unnaturally. With the coming of garden making time the surface manure is to be raked off and the soil harrowed or raked until very mellow. If any weeds have started they may be killed by hoeing or light cultivation. Treated in this way a garden plot will be in ideal condition for the production of delicious vegetables.

EVERGREENS THAT KEEP GREEN IN WINTER

HENRY WILD
Landscape Gardener and Planter

TIME was, and that not so very long ago either, that nobody, except the sure enough crank, planted the garden with a view to anything other than the mid-summer effect. Then came the spring glory idea, and later the autumn foliage color, and berried shrubs and evergreens for winter brighteners.

All well and good, but the fact is that all evergreens are not really green in winter. They may hold their leaves, and so justify their being spoken of generally as "evergreens," but they may be purple and brown, or bronze—not green. And so, as there is yet time for planting to be done for effects this winter, let us consider what evergreens are green in winter and order for ourselves accordingly. I would not decry the beauties nor the values of those plants that do change color, for the processional changes of tone are all desirable; but always green evergreens do add greatly to the brightness of the picture and near the home seem to extend to the outdoors some of that indoor cheer that bids us welcome.

Change of color in winter is nature's general mood so there are only a few plants that depart from the rule and from which to choose. At the same time the list will be found to embrace several very interesting forms, while the majority are of a hardiness and beauty that afford quality in place of quantity.

Most of the varieties here discussed have been under observation for many years, while a few have been noted during visits to private grounds and nurseries during winter and early spring. The best time to select varieties that retain their green foliage is, of course, April, before the new growth starts, and the winter dress is unchanged.

THE Arborvitaes or Thuyas provide several forms that retain their green foliage during winter. The variety pyramidalis is perhaps the best known; of dense compact habit, it resembles our native Cedar more closely in form than any other variety of Arborvitae, but keeps a better color. It needs a good soil with moisture for its best.

The variety known as Hill's Pyramidal Arborvitae retains its green color the year through. This is in direct contrast to the Western variety which turns brown in early winter. The Siberian Arborvitae has large, dark green foliage, is extremely hardy, and retains its clear green color through the winter. Of pyramidal form it is a type that requires very little attention, owing to its compact habit, and it is adapted to most soils.

In a planting of Thuya Vervaeneana I once noticed a distinct variation of a beautifully green form that retained its color through each winter, specially noticeable among the true Vervaeneana type as that turns bronzy during winter. Plants propagated from this form also remain green all winter. I have been unable to identify it under any recorded name.

Thuya Rosenthali has dark green foliage and has been a great

Henry Troth, Photo.

A GREEN AND WHITE STUDY

When snow falls and covers the earth in its mantle of white the relieving tones of foliage on the evergreens are doubly welcomed. The bold stiffness of the Spruce is "all spruced up" indeed, and keeps its fresh color at all seasons. Rhododendrons with old White Pine in rear

favorite with me for several years. It proved very hardy through severe winters, remaining green without any protection when many others were damaged severely. The foliage is distinct in shade, while its form entitles it to a prominent place in the evergreen garden.

Among the Junipers the Savin is one of the best for perpetual color, retaining a firm deep green in shade, and is thus ideal for use as a ground cover. This is quite distinct from Juniperus Sabina tamariscifolia, which has gray-green foliage.

Under the catalogue name of Juniperus Smithi is a type not widely known which retains a grass-green color the year through. It is not so strong in growth as pyramidalis, or Rosenthali, although pyramidal in form.

The Spruce family will be represented by Picea orientalis which will stand the one color test better than most of the Spruces, and is far ahead of the Norway Spruce for small lawn or garden planting in any circumstance, holding its lower branches well which the Norway does not. This tree will require more room than any of the Arborvitaes and is ideal as an isolated specimen. The foliage is short and dark green.

The dwarf form of this Spruce (variety compacta), has the same rich green color and is very useful where space is limited or for brightening the rock garden.

Pines suitable for the evergreen garden such as we here have in mind are few and far between. The Dwarf Mountain Pine (Pinus montana Mughus) is perhaps the best for the purpose. It varies enormously in both form and shade in individuals, but there is no direct change of color in winter. One can find more variations in a bed of young Mugho Pines than in almost any other evergreen, and an interesting planting might easily be made of this one thing alone. Some will run to long growth with loose needles, while others make a short compact growth without any distinct leading growth, and others show every intermediate grade.

Most attractive in dwarf Pines is the Japanese Table Pine—Pinus tanyosho, or, correctly, P. densiflora umbraculifera. This is in direct contrast to Mugho, lighter green in color, with longer needles like its parent type and growing with an almost flat top.

Pinus densiflora introduces a decided color accent in large plantings and its soft yellow-green is a relief to the generally sombre effect of its associates. It may be used in medium sized mixed plantings if the leading growths are kept cut back and it is quite distinct from both the Scotch and Austrian pines. It is also attractive when in flower.

Very few of the Abies or Firs are of one color, but standing out conspicuously in its family is the Japanese Fir (Abies brachyphylla) a truly wonderful plant in not turning color at all during the winter. It has a very symmetrical form, is very hardy and not particular as to soil. It will not burn like the Russian Nordmann Fir in winter and differs from both that and Abies Veitchi by having no glaucous under color.

The Japanese Yew (Taxus cuspidata) the leader among the hardy upright growing Yews has the added attribute of being beautiful at all seasons, keeping an evenly dark green color the year around. The native Ground Hemlock (Taxus canadensis), it will be recalled, changes to a reddish tone in winter and the English or Irish Yews suffer from scald as spring advances —all except the spreading form, Taxus baccata repandens, which belies its family reputation in winter endurance. The slender pointed leaves turn upward and are a beautiful shade of deep green.

The very ornamental nature of the Japan Cypresses has made them justly popular, but regarded from our present standpoint they are somewhat deficient. Of all this family, Retinispora filifera is most consistent in keeping to one shade. The thin, slender foliage would suggest its being delicate, but I have found the plant to stand exposure to both sun and wind in winter better than the broad foliaged types. This is also true of the golden form (R. filifera aurea) which differs only in color; the former variety being bright green.

Quite often it is remarked that the evergreen garden is too sombre. I fail to see this, and plants mentioned above lend a cheerful touch of real green through the whole

Arthur G. Eldredge, Photo.

YES, IT'S LATE WINTER—BUT REDEEMED BY EVERGREENS

For all the wintry brownness of the grass, the foliage of the Mountain Pine, English Ivy, Yew (on the left), and Box (rear centre) is alive in varying shades of green which has been retained all through the dormant season

Nathan R. Graves Co., Photo.

FOR A WELCOME ON CHRISTMAS MORN

We are all too likely to overlook the flowering evergreens in our enthusiasm over the cone-bearers; but let's keep a corner for the Christmas Rose (Helleborus niger) which gives its crystalline white flowers amid snow and ice

year; also, if used with types that turn to bronze and brown tints during winter, they lend a touch of cheerfulness by standing out in pleasant relief, reminding one of the glorious green that is so noticeable in English gardens.

WHERE a variation, or addition, to the usual forms of evergreen planting is desired, the following plants will prove attractive. Andromeda floribunda furnishes a pleasant contrast, the graceful branches being deep green all winter and the pretty white blossoms a real attraction in spring. Andromeda japonica turns to bronze in winter. Evonymus vegetus, the Evergreen Bittersweet, is splendid if allowed to grow naturally, also as an undercover where grass is not required. It carries fruit similar to the Bittersweet. Evonymus Carrierei will answer the same purpose.

Japanese Holly (Ilex crenata) is an excellent plant for the winter garden; this may be allowed to grow naturally or, if required, may be clipped in various forms. The Inkberry (Ilex glabra) is also a very useful type which carries a profusion of black fruit in the fall.

Why not give our Mountain Laurel a place in the evergreen garden? It will lend color in spring with its pink and white blossoms. Pachysandra terminalis will grow in the shady part of the garden, forming a dense green ground cover in time. Vinca minor will lend a touch of blue with its flowers in early spring. Both may be used in places where grass will not grow.

Daphne Cneorum is worthy of a place in every evergreen garden, for its fragrant pink flowers are a delight in spring. They were in flower the second time this season in my garden in August and remained beautiful during a full three weeks. Try these near the Yews to form a symphony in pink and green.

Last but not least the Christmas Rose (Helleborus niger), the foliage of which is beautiful all summer as a ground cover. What a joy to be able to pick the flowers of this hardy, evergreen plant on Christmas morning! I had that pleasure last year. I wonder if a garden full of flowers in the summer is appreciated any more than the corner in the evergreen garden where the Helleborus blooms under the shelter of the Yews on Christmas morning?

BIRDS AND VEGETABLES vs. CATS AND CATERPILLARS

EDITH M. PATCH
Maine State Entomologist

Why the Gardener Needs the Birds and How Cats May Be Kept as Household Pets Without Becoming an Economic Menace

DURING twenty years in the pursuit of my profession I have learned no more important message to give to those interested in plant health and plant welfare than to speak well of birds and to urge their protection.

This present plea is addressed neither to emotions nor to a sense of fair play as regards an elder brother-life singing its way down through all the ages until we invaded the land and called it ours. No, this plea is for your hard-headed common sense, for your shrewd economy, for the bank account that depends upon crops, a plea for the proper policing of your garden.

THE modern agricultural slogan is "coöperation." Coöperative buying and selling and growing and breeding. These movements are in the right direction but they do not go far enough—since man cannot live by himself alone. There is no sort of coöperation more needed by modern agriculture than a revival of an ancient custom—coöperation with birds, that old-fashioned method by which Nature, for a million years, more or less, kept the vegetation of America, both tree and herb of the field, safe until the day the white man arrived. In the brief few years since, sad to relate, he has come so dangerously near exterminating the native army of feather-clad entomologists that, at roll-call, fully ninety-five per cent. of their numbers are now missing from the ranks.

This may sound like a sermon, but 'tis not so intended. It is rather a confession—a confession of personal inadequacy. For I have been dispensing entomological advice for almost a score of years and I cannot say that I have succeeded in bringing home to those who suffer from insect plagues any feeling of responsibility for their afflictions. I seem to have failed to make plain the fact that, though spray equipments and poisons and cultural methods and literature have become a necessary investment, birds are still what Nature made them, the only perfect entomological police.

AND how do the gardeners of the country coöperate with this ancient order of feather-clad entomologists? Perhaps one illustration will suffice. A few years ago I was asked to give "saving" advice with reference to a certain woodlot, a splendid growth of Maple and Beech. It was July. The trees, in full leaf a few weeks before, stood as naked as if it had been January. The man who had appealed for help in his hour of need against the caterpillar horde that had invaded his place, was the proud owner of twelve handsome cats.

For some time I hesitated to tell this incident. It seemed incredible that a man with cultural interests could give the shelter of his own roof to twelve of his worst foes. Yet when I did venture to relate the circumstance, a farmer remarked, "Humph—a man in our neighborhood owns thirty cats!"

NOW I hold no grudge against the cat. Personally I *like* Thomas and Tabitha all the way from the days of their charming kittenhood to their more dignified estate of purring partnership in the comfortable joys of the glowing hearth. They are no more to be blamed for catching birds for food for themselves and their family than a bird is to be blamed for catching caterpillars for the same natural purpose. The question of morals in either case does not enter. The cat is not a criminal. Neither is the owner of a cat that is kept confined inside a cat-proof fence, during the nesting-season of birds.

But the person who gives his cat freedom of the fields and underbrush during the season of bird nests is a neighborhood thief. That word is not pretty—neither are the facts.

There may be exceptions but, if so, they go to prove the rule that it is a poor cat that will not, either for the fun of the chase or for food, make a killing of fifty birds a summer—given its liberty in a region where birds are as abundant as they ought to be for the good of the community.

Now every time a cat kills an insect-eating bird, he saves the life of not less than 500,000 annual insects and their progeny, a total that can hardly be less than 50,000,000 insects in two insect-generations. A cat that kills 50 birds a summer potentially releases 2,500,000,000 insects during two seasons.

But to be conservative, we will suppose that those twelve cats owned by the man whose trees were stripped by caterpillars in July, did not care much for bird-meat and did not much enjoy the fun of catching them (we will call them ridiculously unnatural cats for the sake of making the case in question a mild one). We will suppose that each of these handsome cats killed but one bird the previous summer. These twelve birds, had they lived, would have taken not fewer than 12,000 female moths, each moth of this particular species capable of laying 500 eggs. This would give us in the first generation 6,000,000 caterpillars and in the second generation 3,000,000,000 caterpillars—three billion caterpillars to balance twelve birds—one bird killed, a season or two previously, by each of twelve cats.

The average gardener, of course, does not own twelve cats; but if you know of any neighborhood in the country infested by so few as twelve cats, each of such nature or training that it takes but one bird a year, my entomological advice is to buy land in that vicinity and save money on increased crops and decreased cost of spray equipment.

THERE are two ways of considering cats. "The State Board of Fisheries and Game at Hartford, Connecticut, declares that cats, *when found at large*, should be treated as vermin."*

The other extreme was the attitude of the early Egyptians. Cats in Egypt were sacred. In life they were pampered and in death they were preserved as mummies. Of course, a mummy can't kill birds, but in those days before the sacred cats of Egypt were ready to be embalmed, what were they doing? For in the time from Pharaoh's day to this, Nature has not changed her proven ways. Then, as now, it was natural for grasshoppers to eat green things, both tree and herb. Then, as now, it was natural for birds to eat grasshoppers. Then, as now, it was natural for cats to eat birds, so long as there was an available supply.

Whether the insect plagues that were visited upon Pharaoh are to be credited to the Lord or to the sacred cats of Egypt, may be an academic question. There is nothing academic about the bird problem and the American farmer. It is an economic question of gigantic importance. The insect plague settling upon our land is yet in its infancy. It is still estimated at only about one billion dollars a year. What it will be twenty-five years from now depends to a tremendous extent upon the attitude of civilized man toward birds.

The warning sounds to America as clearly as, according to story, it did to Egypt.

*Any one further interested in the facts of the bird-destructive activities of cats should consult Economic Biology Bulletin No. 2 of the Mass. State Board of Agriculture, The Domestic Cat by E. H. Forbush, State Ornithologist.

BY ALL MEANS PLANT NUT TREES

LEWIS AND MARY THEISS

Great Possibilities in a Somewhat Neglected Crop that May Also be Utilized in Developing the Permanent Landscape and Ornamental Features

WHEN it comes to the productive part of the home garden, we plan for length, breadth, and depth, largely ignoring that fourth factor, height. Some of us, indeed, put up a few bean poles, and use a little of the space above ground as a second story garden as it were. But we might as well raise skyscrapers as two story structures, for the seventh and eighth stories can be just as productive as the second. And we have food plants that are also ornamental that grow to such heights—the nut trees.

The autumn, when gardeners and nurserymen alike are not so rushed, is a good time to start this "top" growth, which is eventually to furnish a noble shade for the home, to ornament the grounds, and to add delightful variety to the dietary. Now is a good time to start gardening in the fourth dimension, as we may call it.

HAZEL NUTS FOR YOUR HEDGE

Thriving in any moderately rich, well drained soil in mild regions and easily propagated by seed, the Hazel Nut (Corylus) or Filbert is adaptable to a number of uses and deserves to be much more commonly grown than at present. It makes an admirable hedge, decorative in character and bearing an abundant crop of small, very palatable nuts. Grosse longue, one of the European varieties popular in this country, here shown

EVERYBODY likes nuts, and most of us would like more nuts than we commonly buy. Without much effort we could raise them on our own grounds and at the same time add to the beauty of our home plots, for few trees are more ornamental. The Black Walnut, with its sparse but lovely foliage; the denser leaved Hickory; the spreading Persian or English Walnut; the lofty Pecan, as majestic as the Elm; the vigorous, ornamental Japan Walnut; all are trees that would adorn and beautify any planting and satisfy the most exacting landscape requirements.

Because of the difficulty formerly experienced in budding and grafting nut trees, nut raising has not been popularized, as the growing of fruit has been. But such improved methods are now in use that nut trees are grafted and budded with as much certainty as fruit trees. Consequently prices for nut trees are reasonable and practically any home owner can now afford to buy one or more.

Grafting or budding of nut trees is necessary because nuts, like the orchard fruits, do not come true to variety when raised from seed. One of the pioneer pecan growers of Louisiana raised thirteen seedlings from nuts borne by the same tree and no two of them produced nuts alike. Some were twice as large as some others; also the quality varied greatly. Perhaps the most striking discrepancy was in the yields. The poorest yielding tree never produced a crop of more than 5 pounds. The most prolific bore at one crop 150 pounds.

Many seedling nut trees never bear, and all are slow in producing nuts. A grafted or budded nut tree will yield as early as a grafted or budded fruit tree and will have the general qualities of its parent tree. In our own gardens, four years ago, we planted four English Walnuts—three grafted trees and a much older seedling. This seedling even now shows no signs of bearing, but one of the grafted trees has already matured a perfect nut, one has twice set nuts though none persisted to maturity, and the indications as we write are for some nuts this year.

Among the hundreds of young fruit trees in our orchard, there is probably not one that has borne earlier than this—in the fourth or fifth year after setting out. It used to be said that the man who planted Northern Spy Apple planted for his grand-children. Planting seedling nut trees was even worse. All that has been changed. Buy from a trustworthy nursery a good grafted or budded nut tree, take care of it, and in a few years you may reasonably expect to have annual crops of nuts. A friend of ours has two Japan Walnuts, planted twelve years ago, that have borne generously for some years.

WALNUTS are perhaps the most vigorous growers among the nut trees. The Black Walnut becomes a very noble tree; with its great trunk and lofty top and beautiful, pinnate leaves, it is highly ornamental, especially when hung heavily with nuts in their round, green hulls. The foliage is somewhat sparse, and the shade not dense. The English Walnut casts a much denser shade. It, too, becomes a noble tree, sometimes reaching a height of seventy feet at maturity. The Japan Walnut is highly ornamental and grows with almost incredible rapidity. Its nuts, looking somewhat like elongated English walnuts, taste exactly like butternuts. This latter tree, the butternut, is always rather ragged and rusty in appearance, and drops its leaves very early in the fall. The nuts are delicious, but otherwise the tree has little to recommend it for home planting.

SHAGBARK HICKORY
(Carya ovata)

An impressive specimen of perhaps our most popular native nut tree whose yearly yield is figured in bushels. Found throughout the Middle West and in many of the Eastern Atlantic States, the Shagbark plays in the quality of its crop a close second to its relative, the Pecan (Carya Pecan). Its nuts are large, delicious in flavor, and easily cracked. Its dignity and enduringness render it the fit and natural guardian of a home

HICKORIES are valuable for home use. They are always good to look at, and their opening buds are as gorgeous, when the sun hits them, as the most beautiful of flowers. The trees cast a fine shade. In the fall they are symphonies of yellow and brown. Grafted Shagbarks of good variety can be secured from nurserymen. In our own grounds we have a Beaver Hickory that we are watching with interest.

Of all the Hickories, Doctor Bailey says, the Pecan is the most valuable horticulturally. Also it is one of the most beautiful. Its fall display of color is very rich. It may surprise many persons to know that the Pecan can be grown in the North. Doctor Bailey says that Pecans can be raised successfully wherever fruit culture can be carried on. Hardy varieties that originated in Indiana and Illinois can be obtained readily from nut tree growers.

There is no question as to their hardiness here in Maryland. At the time we set out our English Walnuts, we planted three varieties of Pecans—the Indiana, the Busseron, and the Butterick. Since that time we have had two unusually severe winters, during one of which we had temperatures of approximately 25 degrees below zero. Not the slightest harm was done to either our Pecans or our English Walnuts. The latter are grafted on Black Walnut stocks, which is supposed to make them hardier. On the other hand, several of our Sweet Cherries suffered severely and have been dying by inches ever since.

Incidentally, the Pecan grows to very large size. In the North it will not attain anything like the growth it makes in the rich bottom-lands of the South, where it attains a height of 100 to 175 feet. Also it is a very long lived tree. At Mount Vernon there are two enormous Pecans that George Washington himself planted. For use in a city, where high buildings dwarf ordinary trees, the Pecan might be particularly serviceable.

SEEDLING WALNUTS

The Persian or English domesticated species (Juglans regia) has found conditions here to its liking and in California alone there are more than a million trees which largely supply the rest of us with the delectable and nutritious "English Walnut." Why not grow some of our own? A perfectly possible thing wherever the winters are not too rigorous and there is a fair amount of moisture

Chestnuts need no praise; but the fatal disease has effectually stopped any considerable planting of the native. Yet the Japanese varieties are available for the garden. They fruit when still quite young and have larger nuts if not quite so sweet as the chinkapin.

FILBERTS offer a striking contrast: The plant is more of a bush than a tree, though it can be trained into a low, bushy tree. In its bushy form the Filbert can be used with profit to form hedges, screens, and massed plantings. It can be kept unnaturally low by pruning; and pruning encourages the formation of fruit spurs. Its leaves are very beautiful, and the leafy involucres that contain the nuts are highly artistic.

When planting Filberts, use good European varieties. These nuts have been bred up to large size and good quality. They should never be planted with or near the native Filberts or Hazel Nuts which are troubled by a disease that does not extensively harm them but which is absolutely ruinous to the European varieties. A good Filbert should bear 20 pounds of nuts a year at maturity. A hedge or a mass planting, therefore, would be profitable as well as beautiful, even if the yield were but half as great as the estimate.

A little Filbert costs about as much as a fine Walnut, and enough of them to form a hedge would cost a good deal, but any one can multiply Filberts readily by layering. A pliant shoot is bent over horizontally and pinned under the ground with a peg at a node. The top is bent upward and tied to a vertical stake. The part underground will strike root and the shoot may then be cut from the parent. In our own gardens we have made a start toward a Filbert hedge, with two bushes, from which we are propagating in this way. These are of different varieties, as is desirable, for the Filbert needs cross pollination. In fact, cross pollination is being increasingly recognized as an important factor in the successful cultivation of many fruits and other things besides nuts.

THE Hard-shelled Almond is another nut tree that can be trown successfully in the North. To be sure, the nuts are inferior go the paper-shelled almonds of commerce, but the trees are small and ornamental, and by pruning

Helen W. Cooke, Photo.

A GLEESOME SPORT OF CHILDHOOD RAPIDLY BECOMING A MERE MEMORY

Blight has been doing its baleful work so effectively that the Chestnut with all its happy associations will soon be a thing of the past—those October mornings when sticks were whirled upwards and ripe burrs came tumbling down, when the whole round world seemed atingle with merry shouts and laughter—too bad that autumn must lose its chiefest joy for childhood with the going of the Chestnut!

"And shouting boys in woodland haunts
caught glimpses of that sky,
Flecked by the many-tinted leaves, and
laughed, they knew not why;"

* * * * *

"Once more the liberal year laughs out
O'er richer stores than gems or gold;
Once more with harvest-song and shout
Is Nature's bloodless triumph told."

Whittier

can be trained into low, bushy growths, quite as decorative as many shrubs. And the flowers are attractive.

Probably a home grown nut is no better in quality than one bought at a store. Yet, as appetite is the best sauce for any food, so the pleasure of raising one's own nuts at least adds to their piquancy.

THERE IS STILL HOPE

Despite the ravages of disease and the swiftly depleting stock of native Chestnuts the outlook is not all gloom, for the Japanese varieties may help to fill the gap. Their greater hardiness in the matter of resistance and the fact that, like the Peach, they yield when only a few years old are distinct points in their favor

OCTOBER'S MEANING TO THE GARDENER

THE inspiring lesson that the gardener gives to the world is that of always marching hopefully toward the future, and now that the fall is come he sets his mind on the spring. In bridging the gap of outdoor inactivity from fall to spring there are foundations to be laid at both ends, details of conservation and preparation, from fertility of the soil to proper care of the garden accessories; from careful storing of left over seeds, etc. to spraying against next year's scale and pruning for next year's crops. Oh yes, there's much actually ahead for the forward looking gardener.

SOIL CONSERVATION

There is a great deal more to soil cultivation than the majority of planters seem to believe. Experts on the subject agree that both European and Oriental horticulturists are a great deal further advanced in the practice of soil management and in the conservation and stimulation of its fertility than we are. To turn the soil itself is beneficial. To let weeds rob the summer's accumulated fertility is a crime against your garden. The one way to prevent this is to cover the soil with some useful crop that will add more fertility. Rye is perhaps the best known of them. Where the season is long enough and at least thirty days are left before frost arrives, it will be even better to sow some Vetch with the Rye. Be sure to select the Winter or Hairy Vetch (Vicia villosa), which will endure throughout the winter, starting a growth very early next spring. It will add nitrogen to the soil by its root bacteria as well as green manure for the formation of humus.

While considering conservation of soil fertility, please heed a plea for the greater conservation of the fallen leaves. An authority on the subject states that America annually wastes one million dollars worth of valuable plant food by the burning of dry leaves. Not only is leaf mold perhaps the finest possible of all forms of humus, but, as Nature's own mold-forming material, it stands practically for the one insurance against the loss of fall planted trees and shrubs. The present waste of our leaf-mold resources is appalling indeed.

WATER WARDS OFF FROSTS

It is good to continue to irrigate, because during cool, frosty nights, moist sections are hit less severely by frost than where the soil is dry. Moreover, at this particular season, late crops may be pushed along rapidly by timely irrigation, especially in the evening. Late plantings of Tomatoes, Melons, Cucumbers, etc., may be hurried by scattering a teaspoonful of nitrate of soda to each hill before irrigating.

SAVE GREEN TOMATOES TO HAVE RIPE ONES AT CHRISTMAS

It can be done; but of course careful handling is necessary, just as in the case of choice winter fruits, Pears, Apples, etc. Wrap every green tomato individually in tissue paper and store away on shelves covered with straw; they will then keep in good condition until Christmas, coloring up beautifully as they ripen.

SPRAYING AND PRUNING FOR INCREASED YIELD

As soon as frost strips the trees of foliage, they should be sprayed with Scalecide or Horricum, or some one of the ready made lime-sulphur or oil dormant sprays to keep the scale in check. And, speaking of fruit trees, one frequently hears of Apple or Pear trees that refuse to bear. Chances are that such trees would be improved by moving, not necessarily because they could be moved to a better and more favorable location, but probably because the trees need root pruning. Of course root pruning may be done where they stand. Frequently in richly fed garden soils young fruit trees will "run to wood" or they may be throwing out big roots in an orgy of luxurious feeding instead of making fibrous roots so essential to producing dense crowns with lots of fruit spurs.

Severe root-pruning will often change things. After the pruning or transplanting, press the soil into firm contact with the roots; and mulching the surface, especially if such transplanting is done rather late in the season, will prove doubly beneficial.

ANOTHER WASTE TURNED INTO PROFIT

Finally, it is worth while to take care of your tools! Put them indoors, clean thoroughly, and protect metal parts with grease.

There is no other month, except perhaps March, when the gardener has leisure to do all sorts of odds and ends, which, while apparently insignificant, yet have the most far-reaching effect on the future.

ONE REASON WHY SOME FRUITS DON'T FRUIT

D. F. JONES
Connecticut Agricultural Experiment Station

IT IS gratifying for the home gardener to discover that there are positive advantages in having a number of varieties of a fruit, one tree of each, rather than several of only one variety. But these varieties ought to be selected with some regard to each other. There can hardly be a greater disappointment than the unfruitfulness of trees which have been carefully tended during many arduous years. Of course it may happen that the varieties planted are poorly adapted to soil and season; but above all proper pollination is likely to be overlooked.

Some of our most highly prized varieties fail to set fruit unless pollen is available from *different varieties* of the same sort. Cross-pollination is absolutely essential with many (and generally desirable with nearly all) kinds of fruits in order to insure full, well developed crops. Particularly is this true of Cherries, Apples, Plums, Grapes, and Berries.

Practically all of the commonly grown Sweet Cherries are self-sterile while none of the Sour Cherries are apparently so. Fortunately the Sour Cherries serve as pollinators for the Sweet Cherries, provided they blossom at the same time.

Among the list of Apples which fail to set fruit properly when planted singly are many of our most popular sorts such as: Rhode Island Greening, Golden Russet, Tolman Sweet, Twenty Ounce, McIntosh, Gravenstein.

Other varieties, such as Northern Spy, Esopus Spitzenburg, Fameuse, and Oldenburg produce some fruit but not in quantity when other than their own pollen is excluded.

HAND-POLLINATED SWEET CHERRY

This little pot grown tree of Governor Wood Sweet Cherry promised a full crop of fruit. To test the effect of pollen from different sources part of the branches were self-pollinated and part were cross-pollinated. Only the flowers that were treated with pollen from another variety set fruit; the remainder of the tree was entirely barren (see photograph above)

Grapes, Brambleberries, and Strawberries are nearly always benefited by cross-pollination.

Plums are notoriously self-sterile.

OBVIOUSLY varieties to be suitable pollenizers for each other must blossom at the same time. A difference of four days in this respect is allowable. It is also desirable that the different varieties come into bearing at the same age. For example, Northern Spy Apple trees will frequently delay fruiting until nine or ten years after setting, while Wealthy blossoms and often sets fruit at two or three years. One would not want to await the bearing age of the Spy trees to get fruit from the Wealthy.

The source of pollen has no effect upon the quality or color of the fruit which it starts into growth. A sweet cherry is not less sweet for having been pollinated by a sour. A Greening apple is just as green whether fertilized by Red Astrachan or Grimes Golden pollen .

APPARENTLY to make the troubles of the fruit grower more trying some varieties are not only self-sterile but are likewise cross-sterile in certain combinations. They do not set fruit any better even when cross-pollinated unless the right kind of varieties are at hand. The Western cherry growers found this out to their sorrow. None of the three leading commercial varieties in the West—Napoleon, Lambert, and Bing—are suitable pollinators for each other. These varieties made the best showing in the test orchards where a large number of sorts were being tried out. Here they received plenty of compatible pollen. But when planted by themselves in large orchards they failed to set profitable crops. In such a case less desirable varieties must be included in the orchards to make the main crop varieties normally productive. Among the Apples, as an illustration, Delicious and Grimes Golden, Duchess and Baldwin, Stayman and Graverstein, Yellow Transparent and Stark proved to be unsuitable combinations at the Maine Station in many trials. While Yellow Russet by Baldwin; and Northern Spy, Opalescent and Wealthy, when pollinated by Ben Davis were particularly good combinations.

Information is not available in regard to the pollen requirements of all varieties of fruits, but many failures can be avoided by planting as many different varieties as possible, and this is usually desirable in the home garden for other reasons. In large plantings, it is absolutely essential not to limit the list of varieties too much unless it is shown that the few chosen ones are well adapted to each other in all ways. Much useful information for prospective fruit growers will be found in these publications: for Apples, Maine Station (Orono) Bulletin 287; for Cherries, Oregon (Corvallis) Bulletin 116; and for Plums, Maryland (College Park) Bulletin 207.

If trees are healthy and bloom normally, but fail to set fruit, it is well to suspect a lack of suitable pollen. This can be tested by bringing flowering branches of other varieties when the trees are in full bloom and shaking these among the flowers and leaving them in the trees for the wind and the bees to complete the job. A good set of fruit will be the reward if the fault lies with the pollen and if suitable varieties have been brought together.

SELF-STERILITY in tests made at the John Innes Horticultural Institute in England is clearly shown in the accompanying illustrations. Governor Wood Sweet Cherry was treated by hand with pollen of the same variety and at the same time on different flowers with pollen of Early Rivers. *Only the cross-pollinated branch bore fruit* and this had a full set.

THE REGAL LILY FOR EVERYMAN'S GARDEN

A Flower for the Home Gardeners to Grow in Pots and for Late Spring—The Little Trick in Management

I. FORCING FOR EASTER BLOOM

REGAL LILIES grown in pots are exceedingly decorative, yet are seldom seen, for the very good reason that few gardeners know the trick of handling them. What that treatment is has been discovered by Mr. William Anderson, superintendent of the Bayard Thayer estate in Lancaster, Mass. The Regal Lily makes its top growth and its root growth at the same period, the former being rather in advance of the latter. Consequently, when it is forced like the common Easter Lily and other bulbs from Japan, it produces only a few small blossoms instead of blooming with its natural luxuriance. This fact seems to make the Regal Lily unavailable for commercial purposes, but does not lessen its value to the private grower. Mr. Anderson's method, which gives entire satisfaction, is as follows:

Medium sized bulbs are potted up in early October, 6-inch pots being best, with a single bulb to a pot. The soil used is a mixture of two parts loam, one part leaf soil, and a good sprinkling of bone meal. The bulbs are set fairly deep in the pots, and the pots set in ashes in a coldframe and bedded with leaves or hay when the nights become cold, the sash being placed in position before severe freezing weather comes.

In the spring the pots are allowed to remain in the frame or are removed to any convenient position where there is plenty of sunlight, and while growth is being made liquid manure may be given. The first season these bulbs will flower only a little earlier than those in the open ground, but are very convenient at that time for porch use or in the house. When they fade, the flowers are removed, but the full length of stem is left to die down naturally.

In the following fall the bulbs go back to the coldframe (in the same pots) and remain there until about the first of December when they are taken into heat and forced in the same manner as other Lilies. Having now acquired a heavy supply of roots, they will stand forcing perfectly well, blooming freely at Easter, if the grower is at all skilful. And as a forced Lily, the Regal is unrivalled by any flower that blooms. When the secret of handling it ceases to be a secret, it is likely to be found in greenhouses all over the country, for it propagates readily and grows almost anywhere. It will often flower in eighteen months from seed, but three years are required to produce good forcing bulbs. Occasionally this Lily is damaged by spring frosts, in the colder sections of the country if no protection is given. In many instances last spring the tops were frozen back after they had made a little growth and the decay which set in as a result gradually descended to the bulbs. This is not a common occurrence, however.

THE REGAL LILY (LILIUM REGALE)
White with yellow throat

II. GROWING A NEW LOT FROM SEED

IN MANY gardens the Regal Lily has ripened seeds this season, and the owners are wondering how this seed should be planted. Experience has shown that April (or May) is the best time for putting this seed into the ground. While it can be planted in a corner of the garden, much better results follow sowing in a coldframe using plain ordinary light soil, not manured, and scattering the seeds on the surface and barely covering them with sifted soil. It need not be anything more than a roughly made frame but it protects the young plants from the drying winds and allows them to be covered in winter, although this covering need not be anything more than straw or pine boughs. It is best to leave the young plants in the frames through the season and until October of the next year. Then they can be transferred to the open ground, as good sized bulbs will have been made. It is a simple matter to grow Regal Lilies from seed in this way.

IN THE valley of the Min River in Western China where the Regal Lily has its home and whence it was brought to us a very few years ago by Mr. E. H. Wilson of the Arnold Arboretum, it is subject to intense summer heats and severe cold in winter. Yet despite these climatic disadvantages the Regal Lily riots through the Min and neighboring valleys and climbs the mountain sides literally in "tens of thousands." Anything so adaptable and so enduring readily adjusts itself to new conditions and this "queen of all Lilies" already reigns in many of our American gardens.

THE GARDEN CLUBS' SUGGESTIONS FOR PLANTING BIRD BATHS

As Seen at the New York Flower Show in the Spring of 1921

(For 1st. and 2nd. prize winning exhibits see THE GARDEN MAGAZINE, May, p. 169)

GARDEN CLUB OF ALLEGHANY COUNTY
(Mrs. Wm. H. Oliver)

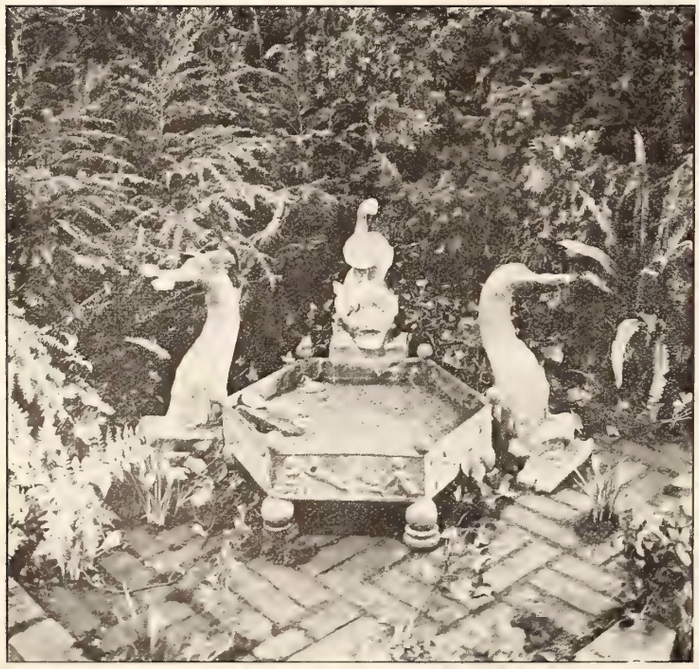
Narcissus, Primroses, and flowering shrub furnish appropriate setting for this bath with its little bronze guardian so full of spring joyousness. Highly commended

EASTHAMPTON GARDEN CLUB
(Mrs. Wm. Lockwood).

Its height makes this a particularly desirable type of bath, allowing the birds to enjoy an unmolested dip. Another point in its favor is its shallowness. Highly commended

NORTH COUNTRY CLUB OF LONG ISLAND
(Mrs. Beekman Winthrop)

A sheltered spot is always highly desirable though it should not be so shut in that the birds cannot note the approach of possible enemies



BEDFORD GARDEN CLUB
(Mrs. Rollin Salters)

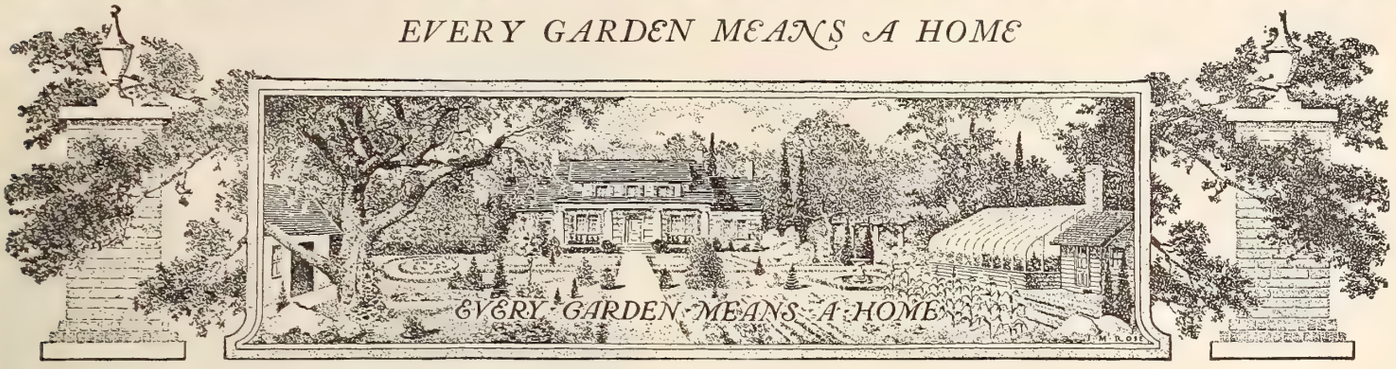
Cedars and Hemlock hold much allure for the birds and, so flanked with evergreens, this type of bath could well be used on a terrace quite near the dwelling. Highly commended

PHILIPSTOWN GARDEN CLUB
(Mrs. Vanderbilt Webb)

Set amid moss-covered rocks and ringed with the heartening bloom of early Primroses, Snowdrops, and Azalea, this little hidden pool was a Bronze Medal winner

AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME



THE SUMMER THAT'S GONE

WHOEVER it was that first thought of dividing the year into seasons, and however he came to do it, one thing is certain: he was no gardener. For of all misleading ideas from the plant grower's standpoint, that of four distinct, equal periods each with its own characteristics and phenomena affecting only the plant progress of that particular three months is one of the most pernicious.

Consider the summer and spring just past. They have brought, of course, their trials and tribulations—frost and drought, heat and severe storms. The late cold snaps took their toll of blossoms and the fruits that should have followed them; heavy rain at blooming time prevented more or less pollination, it is true. But while these catastrophes are attributable to causes that immediately preceeded them, there has been a considerable amount of wilting, yellowing, and falling of foliage and even the death of many plants because of which gardeners have "cussed out" those same frosts and droughts when the real cause of the trouble should have been sought much farther back.

Let us, then, get away from the belief that untoward conditions during a particular growing season—using the word in a horticultural rather than a calendar sense—are the sole and entire cause of the disappointments of that same period. Let us, at the same time, cease imagining that it is the favoring features of such a period that are primarily responsible if it happens to be marked by exceptional garden development.

Rather, let us recognize the fact that the phenomenon of growth in perennial plants is a continuous, uninterrupted performance, extending from one year into the next so that the fundamental causes of successes and failures to-day may trace 'way back among the climatic or other peculiarities of seasons and even years that have long since passed.

THIS time, a twelve month back, plants were completing a vigorous season's growth. But, as fall came on, and then winter, many plants, instead of rapidly and thoroughly ripening their tissues and entering a long period of dormant recuperation, under the influence of a long, warm autumn and an exceptionally mild winter, failed to get "soundly to sleep." Between December and March there were weeks when new leaves were to be found on more than one species of shrub; in many places the ground never froze hard enough to justify mulching; cover crops of Crimson Clover remained green all winter even in the latitude of New York. In short, while the plant kingdom in the temperate regions was inactive as far as building up tissue and storing up food were concerned, it was using up energy and lessening its supply of reserve strength with which to start the spring season of 1921.

Starting fully a month ahead of the usual schedule, warm growing weather had the plants up and growing exceptionally early—and their condition can doubtless be accurately compared with that of a person aroused at five-thirty to catch an early train after a broken slumber following a very late and hilarious party. They were, as you might say, hardly "fit."

And then, instead of an easy, salubrious spring and summer, what did they encounter?—Late frosts, long continued droughts; extremes of heat; and rain, when it came, in deluges and downpours. Just to indicate how unusual the weather was, the Weather Bureau records show that between January first and August fifth, the aggregate daily average temperatures exceeded the total of the ten-year averages for the corresponding days by more than 900 degrees! During the same period, the sum total of the daily precipitation fell below the corresponding accumulative figure for a ten-year period by more than four inches or the equivalent of a full month's rainfall!

Is it any wonder that, in this enervated condition, many a tree failed to pump its sap to its topmost branches, the leaves of which thereupon turned yellow, drooped, and perhaps fell to the ground? Is it any wonder that many perennials bloomed precociously—then pined away and died? Is it any wonder that shrubs that had appeared sturdy and thoroughly established in past years, gave up the fight? Is it any wonder that there has been wailing and gnashing of teeth in many gardens? And, finally, is it to be wondered at if before the summer of 1922 more losses are suffered—ostensibly and presumably as the result of "early frosts" and "winter killing," but actually due in large measure to the accumulated effects of the history we have just reviewed?

All this is no cause for discouragement, however, even though it seems to indicate that, after all, we gardeners are largely at the mercy of phenomena over which we have and can hope to have no control. Rather, in view of the troublous times we have passed through, may we congratulate ourselves that our losses have been no more severe, and be thankful for whatever success *has* come to us in our gardens.

OF COURSE there are lessons involved. (That is one of the wonderful things about gardening—there is never a failure or a disappointment but it points out the way to better methods and greater chances of success.) The first is the ever-wise suggestion that in our planting we use mainly, if not exclusively, species and varieties which we know for a certainty are perfectly adapted to our localities and therefore best fitted to survive such obstacles as may arise. For example, in northern New Jersey this past summer, the yellowing and dropping of Maple foliage was especially noticeable after the long drought of June and early July. But it was noticed that this took place almost without exception on Rock or Sugar Maples and hardly ever on the Norway and soft species. Well, the Sugar Maple is essentially a tree of upper New York and New England, of regions of low temperatures and deep, cool soils; the Norway

Maple, on the other hand, is a better heat register and will thrive on the shallow shale soil found in many parts of New Jersey. The moral is obvious—keep the Sugar Maple in the sections where conditions suit it best.

The second suggestion pertains especially to this particular year, and is that we should all mulch heavily and well *immediately after* the ground has frozen and the plants have entered their winter period of dormancy. The idea is not to protect them from extreme cold especially, but rather to prevent them from feeling the effects of possible mild spells, to keep them sound asleep so that they may conserve the maximum amount of energy for the following year. To this same end we may well hope, as gardeners (however we may feel as coal-buying householders), for a long, continuous, moderately severe winter during which our plants may rest quietly, luxuriantly and well.

WE KNOW, if we only stop to think of it, that there is no reason to expect a hard winter just because last year we had an easy one; or vice versa. Therein lies another of the joys of gardening—its infinite variety and unexpectedness. Isn't it odd that, after all, though we are continually talking about "average seasons" and comparing conditions with "normal," we never get or can hope to get a really "average season" or conditions that *are* truly "normal?"

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

The Lovely La Marque Rose

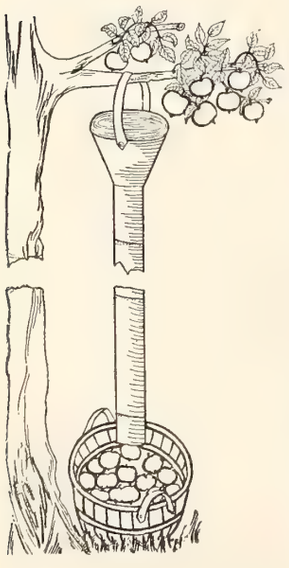
To the Editor of The Garden Magazine:

PROBABLY some of your readers who have inquired for the La Marque Rose would like to know that two year plants can be had from J. E. Jackson, Piedmont Greenhouses, Gainesville, Georgia. It is certainly an exquisite Rose.—Mrs. W. F. Brown, *Anniston, Alabama.*

Fruit Picking Basket for Use in High Trees

To the Editor of The Garden Magazine:

THIS contrivance consists of a bottomless funnel-shaped basket connected with a tube, having its lower open end at the ground. A leather strap, having one end free so that it can be passed over a limb of the tree or the round of a ladder and fastened to the funnel, serves as a handle. One or more deflectors are located in the tube to lessen the speed of the fall of the fruit and so prevent bruising. The material used is canvas or burlap. The tube can be made any length or in sections so that trees of different heights can be reached.



FOR USE IN HIGH TREES

A device quite easily constructed which greatly facilitates the picking of a crop and lessens the danger of bruising

The dimensions of the parts are as follows: diameter of funnel 2 ft., height of funnel 1 ft., diameter of tube, 5 in.

A 2 ft. opening allows the picker to gather fruit within a greater radius and as the basket is canvas the fruit can be thrown at the opening without much danger of bruising.

The most common form of deflector is made by sewing a piece of canvas inside the tube one third the circumference and attaching a piece of elastic webbing to the free end. When an apple hits the piece of canvas it will stop and its weight will stretch the elastic enough to dislodge the load and proceed to the next deflector. This contrivance allows the man in the tree the advantage of picking all the fruit within his reach. The fruit can either be collected in a basket on the ground or simply allowed to drop.

We have found it well worth while because many of our trees are high and the work of picking the fruit on some of them required the services of more men than the apples were worth when harvested. Cutting down the trees or "dehorning" them would have meant waiting at least six years for a crop; whereas by means of the "bottomless basket," the cost of apple picking has been reduced to nearly that of the low headed trees.—Garrett M. Stack, *Brookfield Center, Conn.*

JAPANESE PERSIMMON

A tree in the Sandhill section of North Carolina hung with ripe, bright-orange fruits in November although most of its leaves have already fallen

The Japanese Persimmon

To the Editor of The Garden Magazine:

THIS Persimmon (Diospyros kaki) was introduced from Japan in 1875. It is propagated by grafting on our native Persimmon and is hardy in the Southern States. It takes kindly to dry soils and will grow wherever the native tree can live. The accompanying photograph was taken in the month of November in the Sandhill section of North Carolina. Aside from its possible commercial value, a tree covered with fruits is very ornamental. Picture a tree such as shown in the photograph with most of its leaves shed, but 9 feet high, loaded down with about 300 bright orange-colored fruits. When ripe the fruit is very tasty and is much improved when touched with frost; unripe, it is like our native variety, very astringent. There are about a score of named varieties in cultivation. Their fruit ranging in shape from oval to perfectly round; in color from yellow through orange to red; they are as large as a medium sized tomato.

The Japanese Persimmon tree seems to be a rule unto itself, one season it may bear seedless fruit and then again fruit containing seeds; often, too, conical shaped and round fruit are borne on the same tree.—X.

For the Love of Birds

To the Editor of The Garden Magazine:

OUR pet cat, a year old, is gone. "Lady Louise" was an adorable, gentle, sweet, playful pussy. When in the dining room on a cushion, or in a coil, sound asleep, she looked like a choice muff of rare fur. She was a good mouser, too, getting out in the morning, she

would be after field mice that tried to find shelter in the houses of the neighborhood. She never ate mice but proudly pranced up and down in the garden with her prey dangling between her teeth. Then the spring brought better prey, she kept watch in our tree tops for the song birds which came early this year. When she killed the third robin, our family council decided that "Lady Louise" must be banished where she could no longer harm song birds. Of course, we could not condemn her to death for merely following her natural feline impulse so "Lady Louise" is now the pet of two children, who live in a small town, where birds do not abound as in villages free from traffic.

A garden without birds would make even the flowers lonely, and no garden can shelter both birds and a cat!—Mrs. Charles Richard Williams, *Princeton, N. J.*

Where to Find the Caroline Marinesse Rose

To the Editor of The Garden Magazine:

IN JUST looking through some back numbers of The Garden Magazine I find a query (The Open Column, June, 1920) from Mary Chapman, Springfield, Mass., as to where the Caroline Marinesse Rose may be procured. This Rose is listed in Vick's catalogue for the spring of 1920, page 96.—C. H., *Roxbury, Mass.*

A Fine American Shrub

To the Editor of The Garden Magazine:

OF NO end of American plants that I found thriving in England, the Zenobia was one that seemed too much neglected at home. There the shrub was styled Z. speciosa, but I fancy that a more correct label would be Z. cassinifolia (Andromeda speciosa). Its natural habitat is from Florida to North Carolina, but it has been found hardy as far north as Massachusetts and Missouri. Being low, two to four feet, it is easily placed where it can be well protected. Its waxen white blossoms, like big bunches of Lily-of-the-valley bells, are singularly beautiful in early summer and the crimson tones of the dying foliage provide a second effect for autumn. Good loam, with some leaf mold, is the best soil for the Zenobia.—H. S. Adams, *New York.*

Supplying the Indispensable Leaf Mold

To the Editor of The Garden Magazine:

AS REGULARLY as summer comes my friend has perhaps the most beautiful flower borders in the Iowa town in which she lives. Much of her success with flowers she attributes to her "leaf-mold box."

The choicest wild flowers grow where they are nursed and fed by leaf mold; the cultivated flower responds equally to liberal doses. Flower culturists generally understand this, but it is not always easy to obtain leaf mold, and especially just when wanted. The best solution is to collect your own. My friend has made a practice of doing this for several years. At the rear of the garage in the backyard out of sight stands a rude bin of boards about 6 ft. long, 4 ft wide, and 3 ft. high. As the sides are removable the bin can be adjusted to any desired dimensions.

When leaves are raked in the autumn, they are not consumed in a bonfire, but are piled in this box. In laying down the Rose bushes two or three weeks later, the leaves are taken out and used for a covering. The following spring on uncovering the bushes the leaves, which are now well started toward decay, are put back in the bin. Here through the spring they are kept moist, the watering can doing duty if there is not sufficient rain. With such treatment rotting progresses so rapidly that by the last of June the leaves have changed to a rich mould which can be cut with a spade and carried out to the flower beds. This is done at intervals through the summer, a little at a time as needed. While the box is being gradually depleted of its leaf mold, a new supply is being started in the empty end, for as weeds and grass are taken out of the garden they are piled in the box to make humus for the next season along with the dead leaves.—Florence L. Clark, *McGregor, Iowa.*

LEAF MOULD BOX

This photograph was taken in June when the mould was being spaded out and used. Home of Mrs. C. F. Kramer, McGregor, Iowa.

Rosa Lucida as a Hedge

To the Editor of The Garden Magazine:

CAN any of the New England neighbors tell me as to the hardiness and general fitness of Rosa lucida as a hedge planting? Does it "sucker" much? I should enjoy hearing from several who have tried out this native species, believing it worthy of a wider reception in this climate.—Henry C. Nye, *Mass.*

—This charming native is extensively planted in the Arnold Arboretum, Boston, as a roadside edging—the white-flowered form being used. It is frequently cut down to the ground to keep it within bounds and it springs up vigorously. It does not spread unduly.—Editor.

Large Patch of Rare Box-Huckleberry Discovered

To the Editor of The Garden Magazine:

FOR many years the Box-Huckleberry (Gaylussacia brachycera) was believed to be extinct. Records of the only place in the country where it grew naturally, near New Bloomfield, Perry County, Penn., had been lost for a long time, but several years ago the plants were found again in flourishing condition. (See G. M., Jan., 1920, page 228.) The newly discovered colony is growing near Duncannon, Perry County, Penn., where it covers the northern slope of a mountain ridge for a distance of a mile with a width of more than 500 feet. There is a slight difference in the plants of the two colonies. The leaves of the plants of the newly discovered patch are longer and narrower and the berries are nearly round, while those of the New Bloomfield patch are pear shaped. The Box-huckleberry grows to a height of about 12 inches and is one of our most beautiful native evergreen ground cover plants.—X.

Lemon Lilies That Bloom Successively

To the Editor of The Garden Magazine:

AMONG the Hemerocallis there is one variety not very generally grown which has given me great pleasure. Everyone knows the beautiful old-fashioned Lemon Lily (Hemerocallis flava) but its counterpart Thunberg's Lemon Lily (H. Thunbergii) is not so often seen. It has all the good points of the old favorite, perfection of color, form, and fragrance, with greater height, a later and longer season of bloom. I would not willingly be without it in my garden where it grows in mass, one of the main features of the July show. I find the different kinds of Hemerocallis vary in time of bloom somewhat in different seasons. Last year (1920) Thunberg's lily or, as it is also called, the Japanese Lemon Lily, opened its first flower July 10th and my group of plants was still giving bloom August 15th, having been a great satisfaction for more than a month. Stems are from four to four and a half feet, slender but so wiry and strong that they hold the flowers erect even in a storm which bent the stout Yucca.

The new Hemerocallis citrina, a Chinese species, is even lovelier; the color is paler and softer, the flower larger and more slender, and equally fragrant. In 1919 it succeeded Thunberg's, but this year it bloomed with it. It is a real gem. Those who are familiar only with the two common Hemerocallis, the tawny Day Lily (fulva) and the Lemon Lily (flava) do not appreciate what garden pictures can be made with these other, as easily grown but softer colored varieties.—Miss A. H. Botsford, *Edgemoor, Del.*

Trees That Best Resist Ice Storms

To the Editor of The Garden Magazine:

MY ORNAMENTAL trees having once been much damaged by a sleet storm, I feel moved to warn all those who are contemplating planting trees in their home grounds that it pays to consider which have the greatest powers of resistance.

The Oak, Horse-chestnut, Shagbark, and Red Maples head the list. It has been found that the Shagbark or Hickory can bear 102 times its own weight, the Horse-chestnut 115 times its weight, the White Birch (native) 130 times, and the Red Maple 151 times! This is ascertained by weighing the ice-covered branches, and then after the ice is melted off, weighing them again.

Those trees most easily injured are the Willow and the Poplar, each bearing only 40 times its weight; the Paulownia, White Birch (European), Silver Maple, and the White Ash, 63 times.

Many of the evergreens have wonderful resisting powers. They have more surface exposed, too, than the deciduous trees, but their lowest branches bend over and rest on the ground, the next ones above rest on them, and so on all the way to nearly the top. This pertains particularly to the Spruces, Firs, Junipers, and all evergreens that tend to grow in pyramidic shape, which come through a storm beautifully. The White Pine and Pitch Pine and others growing differently, with much longer branches of an upward tendency, making the angle all the sharper when they have to bend, are generally dreadfully injured.

There is very little you can do in an ice storm to protect your trees. If they are quite small you can go out and knock off the ice as it forms with a flat stick, or prop up the branches with boards or rails; but when your trees are large and numerous you are practically helpless and can only sit by the fire and hear crash after crash of falling boughs.

An injured tree must have attention as soon as possible after the storm is over, its broken boughs sawed off clean, making the cut sloping to allow all rain or moisture to run off and not soak in. Painting over the cut surface helps also; a dark colored paint can be used, green, brown, or gray, which tends to render the painted spots less noticeable. —Annie Cochran Rawlinson, *Augusta Co., Virginia.*

Landscape Gardening in Arid Places

To the Editor of The Garden Magazine:

THROUGHOUT the Plains Region generally The Garden Magazine seems to be read, yet it is very seldom that we find articles of direct benefit to readers in the "dry country."

The desire for landscape gardening has increased wonderfully in the last few years, but for some reason or other very few gardens in this region are properly planned. The extent of the work seems to be a base planting of shrubs around the buildings with a scattering over the ground, or a border along the property line. Never an individual feature shows itself, nor a garden to really be lived in; no privacy, no forethought in planning is to be found. The places are beautified for the passerby, and the property owners, to enjoy their own places (called grounds) must stand in the street. I have studied conditions for some time now and I am trying to give the people something worth while, but I need help.

At different times landscape men have been imported, but their work has not been entirely satisfactory because, although their knowledge of the architecture was excellent, they were at fault in the choice of plants, and much of their stock succumbed to the hot, dry summers.

Nurserymen are too busy for much experimental work and the list of plant materials is not increased very rapidly. Any aid that may be had through the reading of your magazine will be greatly appreciated. —J. R. Padrick, *Landscape Architect, Fort Worth, Texas.*

—Yes, we'll plead guilty; with the explanation that the greater emphasis in writings must naturally be given to the conditions under which the greater number of our readers garden. It is gratifying to learn of the progress being made in the region of our correspondent, and we trust we may learn more about actual progress with photographs of results achieved.—Editor.

Failed With Tulips For Twenty Years

To the Editor of The Garden Magazine:

I AM a subscriber to Garden Magazine, look forward to its coming, and enjoy it very much—but may I say that most of my enjoyment is derived from its pictures. I get ideas from it—but have to experiment with the ideas, for never have I seen anything about how to grow flowers in Texas—let me tell you I have experimented enough to know that growing flowers in Texas is a very different proposition from growing them in other parts of the United States. I spent many dollars and much time and energy before I found this out.

The first thing I failed on was Pansies. I used to sow them in the spring—result—total failure. Now I sow seed in boxes in September, set plants in open border in November and have blooms from January till June. My Pansies are the admiration of all beholders. This year the first Pansy bloomed January 7th. My next great failure was with Tulips. So great was my disappointment that when any one would send a few Tulip bulbs I felt like throwing them over the fence. I never saw Tulips in Texas, but knew of their beauty from the garden of my childhood over the sea. I tried off and on for twenty years to grow them and finally gave it up. A few years ago a friend had some Tulips blooming in her yard and I learned they were Darwins. I tried again, ordering Darwins. They all came up and bloomed on fairly long stems! They bloomed in April and I hope to make a good planting of them this fall.

I live in central Texas. The soil is stiff, black, waxy, and cracks badly in dry weather. The sun shines hot from June till October and so far I have found only one annual that gives satisfaction during this hot season: Vinca or Madagascar Periwinkle. Can any of the readers suggest something else that will thrive in the open and also in a partially shaded location during these dry, hot months? Vinca will not thrive in shade. Pansies are ready to pull up and throw away by the first of June, being an annual here, and I plant the Pansy bed with Vinca and have lovely bloom all summer.

Though hard to have to plod along finding out things for yourself, it is of course interesting, but there would be so much time and labor and money saved if only we had some one to tell us the proper thing to do and *when* to do it.—Miss Bettie Markey, *Chatfield, Texas.*

Pansy Growing in the South

To the Editor of The Garden Magazine:

PANSIES are absolutely hardy in the latitude of Tennessee and below, as are most plants classed as half-hardy by Northern florists. That is why the printed instructions coming with many of our seed packages hardly apply to this section.

I have learned that the best method of propagating the lovely Pansy here is the following:

Procure wooden soap boxes; fill half full of well-rotted cow manure; then fill to the top with good soil, preferably leaf mold, sifted through a coarse sieve or net; and press down with a board. With a thin plank or shingle mark shallow rows about an inch apart and about a third of an inch deep, and drop in the seed an inch apart. Then take sifted soil and fill the rows level, and pat down firmly with the hand. If the soil seems at all dry I sprinkle with a fine spray, then cover with a board and leave alone for four days or until water is again needed.

The tiny plants usually appear in two or three weeks. They grow slowly and require occasional watering. In the meantime I prepare the flower beds where the sun will shine on them the greater part of the day, forking it up deeply and fertilizing highly with well-rotted cow manure, as Pansies are gross feeders and must have rich soil to produce large blossoms.

This seed-planting we do in northern Alabama about the first week of October, then the wee plants have four or five leaves each by the last of the month or early in November and may be transplanted to the large, prepared beds, where they must be placed some six inches apart, the soil pressed down hard around them and a thorough watering given; then they are left alone through the first winter months except for an occasional watering if winter rains do not fall. The soil may be stirred once or twice to advantage.

When transplanted late in October or November they begin blooming in January to the delight of all, especially new comers from the North, and by March the beds are a mass of wonderful flowers.

All one needs to do in the spring is to give an occasional stirring of the earth, an additional fertilizing and weeding. A Pansy blossom does not attain its full size for three days, so only the largest should be picked.—Lee McCrae, *Birmingham, Alabama.*

The Preference for Perennial Peas

To the Editor of The Garden Magazine:

THE Perennial Pea seems better than the annual Sweet-pea for table decoration and is even better than the Rose for lasting qualities. It comes true to seed as readily as does the Sweet-pea; does not require early planting; and, once established, three or four plants may be depended on to give all the bloom one family wants for life. A rocky hillside in the hot sun is an ideal location, but a square frame with three or four slats at each side to climb on, or a wire fence helps a lot. With no cultivation, no irrigation, and no fertilization a single plant has had on July 4th more than three hundred trusses with open flowers and a still greater number of stems in all stages of development.

Lathyrus latifolius, the Hardy Everlasting Pea of the catalogues, has pea-shaped flowers of unusual size, white, rose, and red; and is

THE PERENNIAL PEA LENDS ITSELF GRACIOUSLY TO DECORATIVE USE

Surpassing the Rose in lasting quality and of remarkably graceful habit, the Perennial Pea holds its own with the best of cut flowers. The variety "Apple Blossom" shown above is a recent Pleas triumph characterized by Mr. Farr as "a wonderful and continuous bloomer;" its flowers are, as the name would indicat , tinged rosy pink

recommended for terraces and rough places. Strange to say, setting seed does not seem to impair the flowering vigor at all.—Sarah A. Pleas, *California.*

Mitigating the Mole Nuisance

To the Editor of The Garden Magazine:

IN THE hope of assisting Mrs. Applegate of Maryland in her warfare against moles of which she writes in the September issue, I am glad to pass along three suggestions—none of which I have myself tried out as yet, but all of which sound practicable and easy. She has apparently discovered what seems to be becoming generally known, namely, that traps are comparatively useless in the loose, friable soils that characterize many—perhaps most—American gardens. In England, I am told by one who knows, the stiff clays lead the little animals to consistently use a few main runs or burrows in which traps can advantageously be placed. In loose, sandy soils it is about as easy for them to take a new route every time they cross the garden; at all events, they are very likely to discard any run that has been disturbed by the setting of a trap or that otherwise exhibits signs of contamination by man. The problem of mole fighting, where necessary, (for in many cases a small number of moles do less damage than they do good in destroying grubs and other insects, mice doing much of the bulb eating often blamed on the moles) is therefore a difficult one.

Method one, especially adapted to the protection of separate beds and borders, consists of digging a trench six inches deep completely around the plot that you wish to protect. Then take moderately heavy but soft twine, run it through coal tar, lay it in the bottom of the trench and fill the latter up again. The moles, it is claimed, detesting the odor, will not burrow across—either under or over—this "dead line."

From the Pacific Coast comes the second suggestion, to the effect that raisins split open, dusted with white arsenic, and dropped quite freely in runs wherever discovered (using a small stick or dibber and disturbing the soil as little as possible) will do away with many moles as well as the field mice that in some sections follow along after them, using the same burrows.

The third scheme, practicable, I should say, only in heavy soils where, as suggested above, the same run is used repeatedly, calls for an eight-inch flower pot and a piece of board rather larger than is needed to cover it. Open the frequently used burrow and bury the pot so that the top of the rim is just level with the floor of the run at both sides. Then mound the earth up around the sides of the pot high enough so that the board can be supported as far above the pot as the diameter of the run. Thus a covered trap is constructed directly in the course of the burrow into which the unsuspecting moles tumble and from which they are unable to climb out. Frequent tours of investigation among the traps can be made, the board covers lifted and any captured moles removed and destroyed. This latter necessity may go against the grain of some. For my part I had rather use either of the other methods which obviate the need of personally killing the prisoners of war.—E. L. D. Seymour, *Hempstead, N. Y.*

Flowers that Thrive in a Clay Soil

To the Editor of The Garden Magazine:

I AM setting out a new garden, a delightful thing to do where one has the garden spirit well developed. What I mean is a lively interest, not so much in mere color and form, as in the growth and development of the individual plant. I do not care for spectacular display, except incidentally, for others to own and for me to look at now and then. I cannot long endure the flaunt and the scent of gold that distinguishes the "famous" garden. For this reason I hope to see the Open Column flourish and remain with us, we who have need of it. My 50 x 100-ft. garden would not yield to the display style and at the same time give me something new to look at every day. I began last year with a new home, finding there a yard of sod ground, some of it loamy, but some pretty stiff clay. I was glad of the clay, for it is necessary to the best Rose growth. I am finding that this flower demands clay modified by leaf mould and an occasional dash of sheep manure (for example) and can show already as good Ophelia, Killarney, Richmond, Gruss an Teplitz, Red Radiance, Frau Karl Druschki, as are usually found at the florist's. Ophelia pleases me most. I have 20 plants or so of it that I have wintered twice and they are now much the most sturdy and active of my Roses.

As to clay: the Rose, Nicotiana, Dahlia, perennial Delphinium (not the annual sorts so well), Calendula, Zinnia, Hollyhock, Cosmos, like it best, if the soil is well stirred, but most annuals prefer loam, enriched by old manure. A big bunch of blue Pansies that I wintered with a little protection does well in the modified clay and is now—July—still, since winter, full of flowers, almost as large as ever, though the Pansies of other colors are mostly gone, or very small in size.

A small rockery at the rear, with woodsy earth and kept very moist, shows many winter pot plants, Fuchsias, Asparagus, etc., growing contentedly with various wild plants. Even some water Sagittarias flourish there. But it takes more space than I can ask to sketch, even lightly, a small garden.—John W. Chamberlin, *Buffalo, N. Y.*

Increasing Strawberry Crops By Mulching

To the Editor of The Garden Magazine:

OUR neighbor beat us every year when we first started growing Strawberries, though we tried hard to produce good berries, and lots of them. So one day we went forth to discover the magic by which he drew such a large amount of beautiful fruit from his strawberry land, and found that the magic consisted of "mulch." His plants grew in a thick, even mulch, and produced fruit much larger and more delicious than any grown in our patch.

That November we picked out all the weeds in our patch, and put on a heavy covering of clean straw. Since then we have always kept the land well mulched, and we now raise plenty of berries as large and delicious as those grown by our neighbor. The reason why plants growing in unmulched soil produce smaller and poorer crops, is that the heaving of the ground, caused by alternate freezing and thawing, breaks and damages many of the fine roots, thus weakening the plants so that they become unable to draw sufficient food and moisture from the soil during the crop season. Before we used mulch, many of our plants became so weak that they died in the summer. Mulch also holds the rain, thus enabling the plants to obtain moisture during the time of ripening, when a very dry spell may be the ruin of an entire crop. Another advantage of mulch is that it forms a blanket for the berries to lie on, so that they need not grow in the dirt where many of them rot. Besides, the fruit is much easier and cleaner to pick.

Oat, wheat, and rye straw make the best mulch, but all straw should be free from foul seeds and grain. We have used fine prairie hay satisfactorily; but coarse hay is unsuitable as it does not make an even covering and lies less closely on the ground. The covering should be applied before alternate freezing and thawing starts. We put on the straw as soon as the ground freezes, and before any snow falls. The mulch can be applied on top of the snow, but the straw is then more easily blown about by the winter winds. A good time to put on the covering is during a light rain or sleet, for the falling moisture will help to pack the straw so that it remains where wanted. We usually apply the straw in November or early December. Two or three inches of grain straw make a mulch sufficiently heavy, when spread evenly over and between the rows. Before putting on the straw, we go over the land and pull up all weeds and level out the ruts and lumps. The field is then smooth and clean when growing starts again.

We do not remove the mulch in spring as soon as the plants start growing, but keep it on as long as we can, thus developing the growth for some time, especially if the season is early. By so doing, we make the plants bloom later, usually enough to protect them from late frosts. When the growth is well started, we rake the straw off the rows, carefully exposing every plant. The straw is not carried off the patch, but is spread out between the rows. Of course, where the patch is small, and the plants do not stand in rows, the mulch must be worked down between the plants.—Charles Olive, *Willmar, Minnesota.*

Possibilities of Potted Cauliflower

To the Editor of The Garden Magazine:

AN INCREASED interest in growing potted vegetables leads to a consideration of what plants are genuine successes handled thus and which are failures? Judging from my experience and from that of certain friends, there is a decided limitation on the kinds of plants which can with success be potted, and among those which do succeed, there are gradations of success, whether they be started in pots, in flats, or boxes and then transplanted to 3-in. or 5-in. pots. Tomato is undoubtedly the best grower; the Pepper, the Eggplant, and the Cabbage yield favorably to this method; but Beans such as the Lima, Corn, and all roots crops are hardly worth trying.

Only lately have I begun to realize that there are considerable possibilities in the potting of Cauliflower. Procuring some choice seed early in March, I prepared a small flat for planting. When the soil (fine leaf mold, garden loam, and pure sand, sifted together) was levelled, I made tiny rows, an inch apart, and planted the seeds, one by one, an inch apart in these rows, covering them with about $\frac{1}{4}$ in. of soil. In preparing the soil a handful of pulverized sheep manure was used as fertilizer.

The stand in the flat was perfect; and when the plants were five inches high, I transplanted them to 6-in. pots, for which a rich and moderately heavy soil had been prepared. In transplanting, I clipped off the tap-roots about halfway down to insure the throwing out of many small feeders. The plants in the pots were sunk in soft soil in a hotbed, where they remained until the first of May. By this time they were exceedingly lusty, resembling small trees of some dwarf variety.

The space in the garden in which they were set had been deeply spaded and carefully worked, and into the soil had been incorporated a heavy dressing of stable manure and a light dressing of commercial fertilizer (the standard ammonia-phosphoric acid-potash formula). The soil was clay, but of a workable kind; and this is most excellent for both Cabbage and Cauliflower.

The rest consisted merely in clean cultivation, two dustings with insect powder to kill the green worm, and the pinning over of the big leaves to keep the sun from spoiling the forming heads—ten-pounders were the result!—A. Rutledge, *Mercersberg, Pa.*

—We very much regret that through an error, the Garden of Mrs. Robert C. Hill, Easthampton, L. I., (July Garden Magazine, page 311), was credited to Miss Ruth Dean. "Grey Gardens" is, as a matter of fact, the creation of its owner, Mrs. Hill, to whom is due all praise for this charming and individual bit of garden making.—The Editors.

Wagner Flowers

More and more do Americans turn to gardens for rest and recreation. To work among them spells rest from the daily worries, an accumulation of surplus energy for which present hurried activity calls.

To get the utmost in joy out of your flower garden it should be constructed as carefully as your home. Men and women who appreciate the difference between haphazard planting and careful designing, will be glad to take advantage of

Wagner Landscape Service

A trained staff of men is at your disposal from this establishment. Their work comprises the furnishing of planting sketches, lists of plant material with which to execute the plans, and, should you desire, thoroughly trained plantsmen will actually come to your grounds and see that the work of planting is done properly.

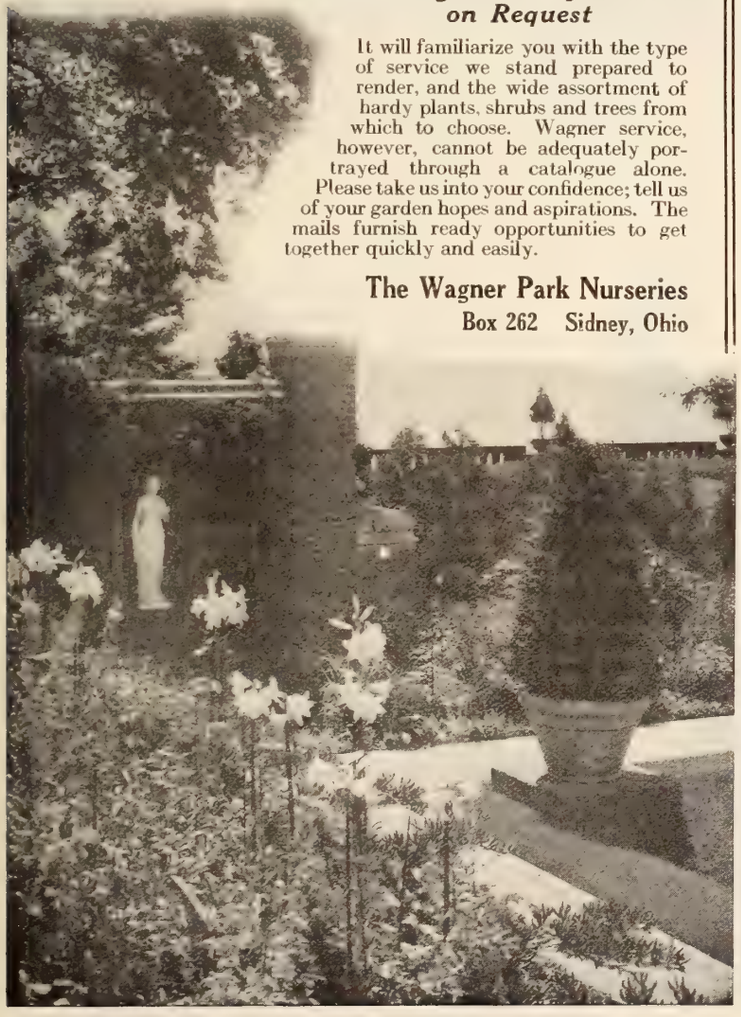
Now is the Time to Start

October is the month of months bringing opportunity to prepare lovely garden pictures for next Spring. Everything in Nature assists to make Fall planting a success. Some of the finest gardens executed by our service were planted in the Fall and gave abundant pleasure to their owners the very next Spring.

Catalogue Gladly Mailed on Request

It will familiarize you with the type of service we stand prepared to render, and the wide assortment of hardy plants, shrubs and trees from which to choose. Wagner service, however, cannot be adequately portrayed through a catalogue alone. Please take us into your confidence; tell us of your garden hopes and aspirations. The mails furnish ready opportunities to get together quickly and easily.

The Wagner Park Nurseries
Box 262 Sidney, Ohio



The Lure of Peonies!

PEONIES—always a prime favorite—are now more than ever in their glory. To-day we have Peonies of a greater delicacy and range of color and of larger size than the old days ever knew. Now there are varieties with the entrancing fragrance of the rose. But the old virtues of hardiness, freedom from enemies, and persistent blooming in the face of adversity still remain intact.

Their charm, fragrance, and color are irresistible—true aristocrats of the garden! And no matter how small your lawn, you can have Peonies! They glorify any garden as with a touch of royalty, and they have few equals as cut flowers—they keep well and are so generous with their showy petals and their delicate perfume.

The following collections are offered for Autumn planting only, for Spring planting of Peonies is not recommended, as the plants start growing so early it is often impossible to ship them dormant. These collections comprise only standard varieties,—favorites because they represent the Peony in its most beautiful form.

Two Remarkable Peony Offers!

Albert Crousse, *pink*	$1.25
August Villaume, *pink*	1.25
Felix Crousse, *red*	1.00
Madame Jules Calot, *white*	.75
Marie Lemoine, *white*	1.00
La Tulipe, *white*	.75
Regularly	$6.00
Special Offer to Garden Magazine Readers	$5.00
Double quantity for	$9.50

Madame Duel, *pink*	$ .75
La Superba, *pink*	.50
Rubra Triumphans, *red*	.75
Duchess de Nemours, *white*	.60
Queen Victoria, *white*	.50
Golden Harvest, *white*	.60
Regularly	$3.70
Special Offer to Garden Magazine Readers	$3.00
Double quantity for	$5.75

Take advantage of these Special Offers at once—and ask for our Fall Planting folder

Moons' Nurseries

THE WM. H. MOON CO.

MORRISVILLE (which is one mile from Trenton, N. J.) PENNSYLVANIA

The Season's Final Chance

To have or not to have—Peonies in 1922—that is *the* question you'll have to decide *this month!* I trust that my last three messages have acquainted you with the work of a Peony Pioneer to the extent that you will want Hollis Peonies to speak for themselves in your own garden. I have much faith in their ability to please that I am willing to abide by your judgment as to whether you want *more* another season. Right now I assure you satisfaction from

This Famous Trio of HOLLIS Peonies

ATTRACTION. One of the very finest of the Japanese type, termed "Wonderful Glowing Suns." Guards are clear tyrian-rose, center same color as guards, tipped with yellow. Pleasant fragrance. $2.00 each.

GEORGE WASHINGTON. Of semi-rose type. One of the biggest dark crimson. Stamens intermingled with petals. Mid-season, $2.00 each.

L. W. ATWOOD. White, with occasional crimson fleck. Center cream-white. Mid-season. $3.00 each.

Special Offer: I will mail one strong root of each of above three for $5.00 postpaid.

My Fall Catalogue Describes Many Others

All told I can now offer thirty distinct Hollis Peonies of merit, with a promise of more to come. Besides, there are scores of the best standard Peonies, Irises, Phloxes, Lilies, as well as Tulips, Daffodils and Hyacinths. In short, you'll find my Fall Catalogue a reliable index to material for present planting, bulbs, roots, plants and shrubs that will help you to the earliest gardens of spring. If your copy has not reached you as yet, *a postcard request will bring it by return mail.*

"The Dahlia King"

J. K. ALEXANDER, *World's Largest Dahlia Grower* **27-29 Central St., East Bridgewater, Mass.**

RHODODENDRONS

KALMIAS, Hollies, Leucothoes, Azaleas

Plant Now! Six for $1.00. Well-rooted. 8-12 in. plants, postpaid to nearby zones, as an introductory offer. Address

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TULIPS. Wedding Veil, Mixed Late-flowering, $2.00 per 100. Clara Butt, Mixed Darwins, $2.40.

NARCISSI. Ten varieties in mixture, 100 bulbs, $2.40.

PEONIES. 20 standard varieties at 40c, others at 75c, $1.00, and up. Send for list, or let me select.

All prices include delivery by mail or express.

ORONOGO FLOWER GARDENS Carterville, Mo.

What "Potgrown" Perennials Will Do For You - -

They come to you, *ready to grow!* For *months* prior to their being shipped they have formed a perfect root system. The roots, growing into a solid mass, firmly hold the soil. Our method of individually wrapping each plant's root ball further insures an undisturbed plant base. Such plants will thrive most anywhere, with little care, after setting out. Sedum reflexus alongside is a typical pot-grown specimen.

Sedum or Stone Crop—

The Flower Crop for Poorest Soils

The stoniest backyards, the poorest soils, the most impossible situations, will grow a crop of Sedums. Some are quite useful as ground covers, others are very ornamental for lining paths. The following distinct kinds

Will Appeal to any Garden Hobbyist—

Sedum acre (Wall Pepper) Of creeping habit. Dainty, fleshy, light green foliage; yellow flowers in masses.

S. reflexus (Stone Orpine) shown alongside. Great for rockery. Yellow flowers.

S. Sieboldi Individual leaves of foliage have pink edges. Rose pink flowers in clusters.

S. spectabile(*Folia Variegata*) Great for lining paths. The showiest of them all, growing 18 to 24 inches tall. Rose flowers and variegated green and white foliage.

S. stoloniferum coccineum A fine, trailing plant, forming great ground covers.

Price, any of above Sedums, pot-grown plants, 25c ea.; $2.25 a doz.

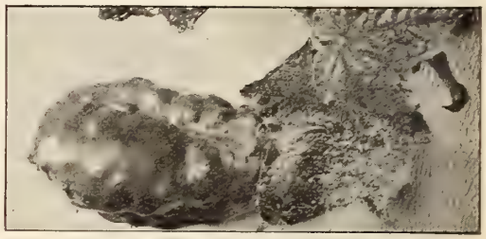
Special Offer: We will supply one each of above Sedums for $1.00; 3 each, 15 plants in all, for $2.50, postpaid East of Mississippi. West please add 25c for postage.

Please ask for complete List of Hardy Plants for all purposes —gladly mailed free.

PALISADES NURSERIES, Sparkill, N. Y.

A SCOUNDREL IN STRIPES

DILL pickles are scarce. The school girl will solace herself with olives, while the dirty-faced street urchin who would buy a large dill pickle from the push-cart, must satisfy his taste with a green tomato or pepper. All this trouble is due to a strange and deadly disease which has attacked the Cucumber vines; a disease known to the farmers as "white pickle," and to the scientists as "cucumber mosaic." It is only within a few years that this has become widespread and deadly, but now it has reached such a point that it seems likely to make an end of raising cucumbers for pickle in many sections where they have been a leading crop.



VICTIMS OF "CUCUMBER MOSAIC"

Cucumbers afflicted with this baleful disease develop slowly, become warty and distorted, and the leaves blotch unhealthily

The usual time of the appearance of the disease is about when the first fruits are picked. The affected cucumbers develop slowly and are very much distorted in shape; a large portion of the green surface being replaced by white. Warts or lumps appear, many of which are green-tipped. In the leaves also the coloring matter becomes irregular and develops patches of light and dark green. Dead areas which resemble spray injury appear usually as V-shaped patches, leaving the centre of the leaf alive.

After struggling along for a week or two, the vine dies out, having given less than one quarter of a crop. Sometimes the tips survive and put forth new leaves which bear a few deformed cucumbers, but the effort is a weak one and the new tips soon die.

As the cost of raising an acre of Cucumbers is upward of $300 and the vines are killed at the very start of the bearing season, the loss is a particularly hard one to bear.

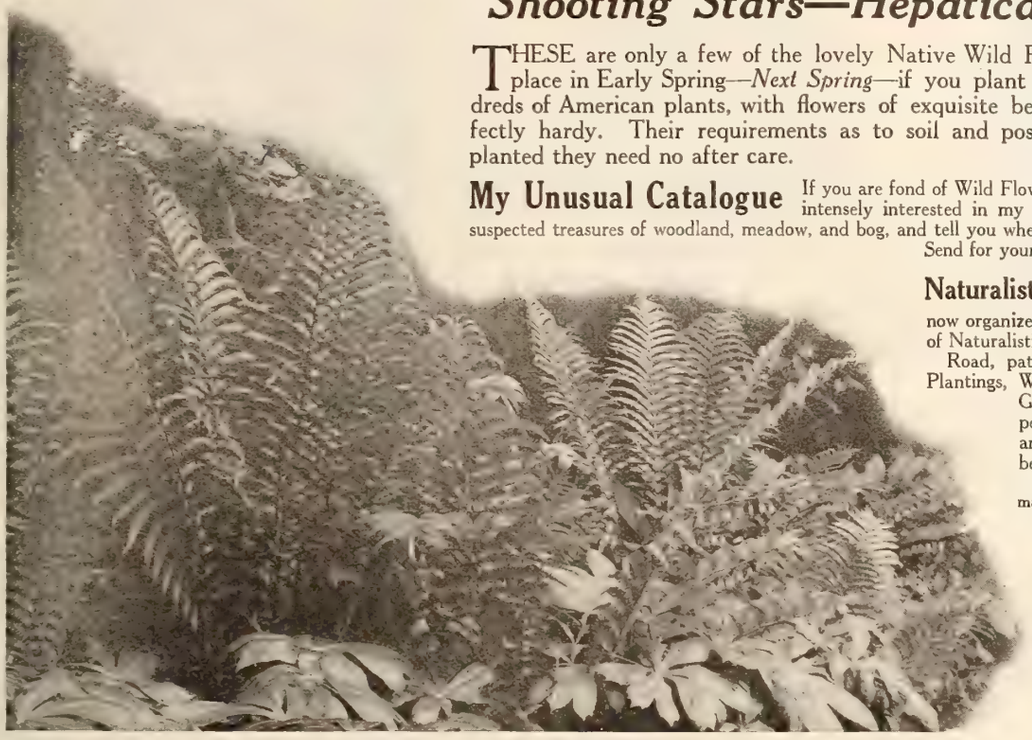
Much study has been devoted to this disease by the United States Department of Agriculture, with the result that we know how the disease is spread, although we do not know the organism which causes it. The wild Cucumber is often raised as an ornamental vine to cover unsightly buildings. Its seeds carry the "mosaic" through the winter and in the spring the vine shows the leaf-mottling which indicates a diseased condition.

Striped cucumber beetles feed upon these vines and later go to the fields just when the plants there are coming up. This striped scoundrel has been proven guilty of carrying the disease from the wild Cucumber to the cultivated plant and later spreading it from one part of the field to the other. It is also spread by the hands of the pickers, and possibly by the cultivators which rub the vines as they pass along.

There is no treatment of spraying which will control "cucumber mosaic" or benefit the dis-

(*Continued on page 116*)

Wake Robins and Trout Lilies—Blue Bells and Shooting Stars—Hepaticas and Bloodroots



THESE are only a few of the lovely Native Wild Flowers you can enjoy on your own place in Early Spring—*Next Spring*—if you plant them this month. There are hundreds of American plants, with flowers of exquisite beauty—all easy to establish, all perfectly hardy. Their requirements as to soil and position are simple, and once properly planted they need no after care.

My Unusual Catalogue If you are fond of Wild Flowers and Ferns (and who is Not), you will be intensely interested in my catalogue, which will introduce to you unsuspected treasures of woodland, meadow, and bog, and tell you where and how you can grow them successfully. Send for your copy to-day.

Naturalistic Landscape Service My Service Department is now organized and equipped to plan and execute all kinds of Naturalistic Landscape work.

Road, path, bridge and pool construction, Woodland Plantings, Wild Flower Sanctuaries, Rock Gardens, Bog Gardens, Water Gardens, etc., where conditions permit, are important and beautiful features of any extensive Naturalistic development, or may be treated separately from any general scheme.

If you feel that your place or any part of it can be made more beautiful—more valuable—by Naturalistic treatment, write to me or to the nearest of my representatives. Personal conferences welcomed at either office.

EDWARD GILLETT
Fern and Flower Farm
3 Main St., Southwick, Mass.

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NOW is the time to plant EVERGREENS and Perennials

We have one of the finest collections of both to be found in America.

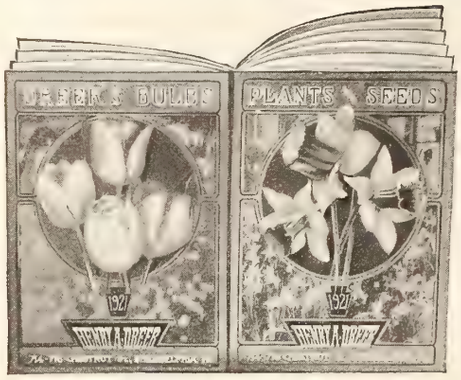
Our fall price list is now ready. Parties interested can have one for the asking.

Now that October has arrived nearly all deciduous trees, shrubs and vines can be planted quite as safely as at any time. Visit us if possible, but if you cannot do that, send us a list of your requirements and give us a trial order.

We depend upon pleased customers to sell our goods. For a quarter of a century we have been pursuing this policy and we have never been disappointed. We regard pleased customers as one of our most valuable assets.

THE BAY STATE NURSERIES NORTH ABINGTON, MASS.
W. H. WYMAN, *Proprietor*

DREER'S Autumn Catalogue *for* 1921



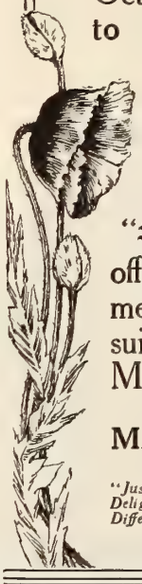
Offers the best grade of Bulbs for Fall planting, including Hyacinths, Tulips, Narcissus, Crocus, Lilies, etc., also Plants, Vines, Shrubs, Lawn Grass Seed, Agricultural Seeds, Tools and Implements of all kinds.

It is well illustrated and gives accurate descriptions of the articles offered.

A copy will be mailed free to all applicants. Please mention this magazine when writing.

HENRY A. DREER, 714-716 Chestnut St., Philadelphia, Pa.

Perennials



October is the best time to transplant Perennials, for then we are assured the maximum amount of growth for the coming season.

"My Garden Favorites"

offers a complete assortment of all Perennials suitable for Fall planting. May we send you a copy?

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HARDY PLANTS

For the Home Garden

Our Wisconsin climate is very severe which eliminates many of the varieties that may be grown farther east or south.

After years of experience and trial we have found many choice varieties that will survive our winters with ordinary protection. These we offer you in our new illustrated catalogue,

"Hardy Plants for the Home Garden"

While the number of varieties is not so great as to be confusing, there are enough to satisfy your every need. Write to-day.

Let's get acquainted

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Garry-nee-Dule **Baraboo, Wis.**

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TREES AND PLANTS

Everything for Garden and Orchard

SYRACUSE, the best red raspberry grown to-day, CACO, a wonderful, large red grape. HONEYSWEET, a new black-cap raspberry and ROCHESTER peach, are fine producers.

Trees True to Name. Apple, peach, pear, cherry, nut and shade trees. Strawberry plants, raspberry, blackberry, gooseberry and currant bushes, vines, shrubs, roses and ornamentals. Best varieties. 40 years' producing better plants. Buy direct. Save money.

Our illustrated catalogue free

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BERRY AND FLOWER PLANTS

For September and Fall planting. STRAWBERRY PLANTS, pot-grown and runner—will bear fruit next summer. RASPBERRY, BLACKBERRY, GOOSEBERRY, CURRANT, GRAPE, ASPARAGUS, RHUBARB plants; DELPHINIUM, HOLLYHOCK, ANCHUSA, HIBISCUS, SWEET WILLIAM, GYPSOPHILA, COLUMBINE, POPPY and other Hardy Perennial Flower plants; ROSES, SHRUBS. Catalogue free.

HARRY A. SQUIRES, Good Ground, N. Y.

"PUTNEY PERENNIALS"

Grown in the Vermont hills and full of that vitality and hardiness so essential to the success of your garden. Also shrubs and berry plants of quality.

GEO. D. AIKEN **Putney, Vermont**

"Grown in Vermont, it's hardy"

The Brand Peonies

Originated by O. F. Brand & Son
America's foremost hybridizers of the Peony

I would again call your attention to the fact that the members of the *American Peony Society* by their vote as recorded in the 2nd Symposium of that Society have declared that

4 of the world's 22 best Peonies are Brand Peonies

Now that the season is nearing its close and before it is too late we wish to introduce to all lovers of good peonies

Two New 1921 Brand Peonies

DAVID HARUM—Light bright red. Flower large, full and beautifully formed. Guard petals prominent and well expanded. Stems tall, straight, strong. Foliage broad, light green and clean. Profuse bloomer. A distinct flower of a distinct shade of red. Very fine. **$25.00 each.**

MRS. JENNIE R. GOWDY—A very large flower with long, narrow, pinkish white petals minutely flecked with red like Asa Gray, with several heavy blotches of carmine on the central petals. General appearance of flower would be called ruffled. The ruffled peony. Very beautiful. **Each $25.00.**

Our best judgment, matured through an experience covering a period of over twenty-two years actively engaged in originating new peonies, guarantees in these two peonies something extra good.

We also still have in stock for this fall's trade, in an almost unbroken list of varieties, the largest stock of Brand varieties in the world, and the largest stock in America of the world's best French, English, and other American sorts.

Send for our beautiful 1920-21 Catalogue

A. M. BRAND *(42 years a professional grower of Peonies)* **Faribault, Minn.**

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Suitable and Suggestive for Beautifying Home Grounds with

Pergolas, Rose Arbors, Lattice Fences, Garden Houses and Garden Accessories

Our illustrated catalogue contains just the things required to lend cheer and pleasure to the surroundings of home.

(When writing enclose 10c and ask for catalogue "H-33.")

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BLOOM

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A GARDEN of glorious roses positively assured if you have Conard Star Roses. Each guaranteed to bloom or your money back.

Each a sturdy field-grown plant from rose specialists of over 50 years' experience.

Each permanently identified by the name of the rose on our printed celluloid star tag which you leave on the plant. This tag is also our symbol of guarantee.

Write for illustrated catalogue of roses for fall planting. It's free.

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Robt. Pyle, *Pres.* A. Wintzer, *Vice Pres.*
Backed by over 50 years' experience

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Practically Unlimited Selection—5 Grand Peonies at Reasonable Prices

1—**Triomphe de l'Exposition de Lille.** A monster flower of exquisite pink. 75c each.
2—**Karl Rosenfield.** Unsurpassed among the reds. $4.50 each.
3—**Delicatissima.** A great favorite. Pale lilac-rose of great fragrance. 50c each.
4—**Rosy Dawn.** Single snow-white flower; a wonder. $1.50 each.
5—**Albatre.** Creamy-white, edged carmine. $1.50 each.
1 root of each of these, $8.00.

IRISES

Our stock of Irises contains only the choicest varieties in Tall and Dwarf Bearded, Japanese, Siberian classes. Send for our catalogue giving full descriptions and lists of Irises and Peonies.

Jacob Schulz Company 550 Fourth Ave., Louisville, Kentucky

Rare Peonies

About October 15th I will finish the planting of my own Garden with the very rarest and best Peonies.

I will have a small surplus of some varieties which I will list at attractive prices.

Do You Care for My List?

LEE R. BONNEWITZ
Washington Street
Van Wert Ohio

How To Have A Complete Dutch Bulb Garden

If you want your garden gay next spring with Daffodils, Tulips, Hyacinths and Crocuses, now is the time to plant the bulbs.

They are the true laughter flowers of spring that bring joy and gladsomeness to the landscape as nothing else does during April, May and early June.

At the first signs of winter breaking up you can have the Crocuses to herald spring's coming—then come the Daffodils with their wealth of golden shades and cheerily nodding flowers. Close on their heels follow the early Tulips in their rich flashing colors.

To round out your joys, majestic Darwin Tulips complete the spring's pageant of color.

We have carefully combined all of these desirable things in a group which we have called our Dutch Bulb Garden, so that by *one planting* you can *have all* of these various types represented in your garden.

The varieties are particularly choice and selected carefully for their hardiness, so they will stand the severe winters of any part of the United States.

A leaflet of full planting instructions will be sent with each order.

Everything listed, you can safely plant right up to the time the ground freezes.

Complete Dutch Bulb Garden

Garden No.	1	100 bulbs		10	different kinds	$ 5.00
" "	2	250 "		20	" "	12.00
" "	3	500 "		25	" "	22.50
" "	4	1000 "		40	" "	40.00

Our Fall Ten-Ten Catalogue is ready. Send for your copy

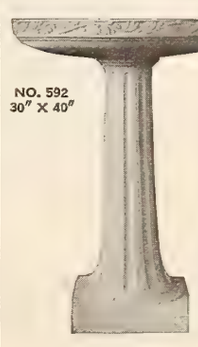
Julius Roehrs Co
At The Sign of The Tree
Box 10, Rutherford N.J.

5 Tulips, including Darwin, Parrot and Mayflowering; Giant Crocus and Poet's Narcissus.

10 large bulbs Mailed for 25 cts.

Beautiful and complete Catalogue Free. Shows great variety of Bulbs, Hardy Perennials, Window Plants, Seeds, Berries, Fruits, etc.

John Lewis Childs, Inc., Floral Park, N. Y.



Established 1810

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FOR GARDEN & INTERIOR

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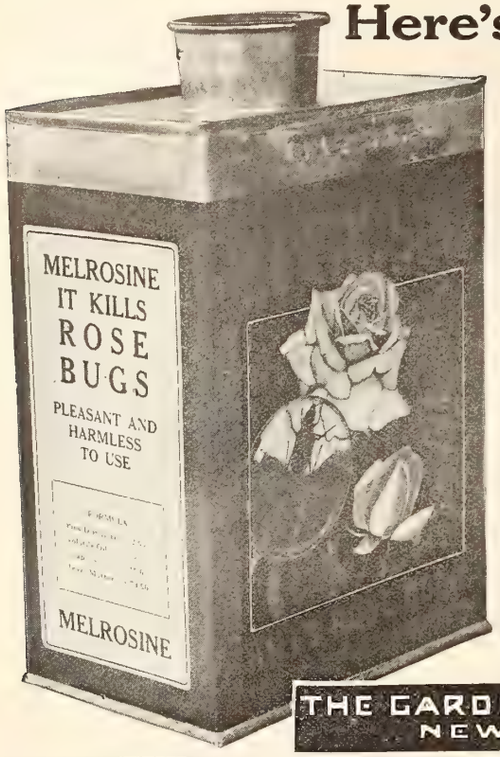

Here's an Extraordinary Free Trial Offer

We know American Landscape Architects are a mighty force in American Horticulture. And as we are told that every member of the profession receives G. M., this special invitation comes to you, in the interest of better gardening.

Write us, if you please, on your business stationery, and we will gladly mail you, free, a trial can of

MELROSINE—The All-round Contact Insecticide

Since it Kills Rose Bugs, of course Others are an Easy Prey

Use the gallon solution on any bug or insect pest that invades your garden. Use it on any Aphis, Spider, Thrip, or Bug. While Melrosine first won fame as **the one** remedy that really kills Rose Bugs, it has a far wider usefulness as an all-round contact insecticide. New uses are being constantly reported. See it at work for yourself.

Melrosine should be in every Garden home. It is sold by Seed Houses and Nurseries. Descriptive circular gives further interesting facts.

THE GARDEN CHEMICAL COMPANY
NEW YORK CITY, N.Y.

DAFFODIL BORDERS

last for years if the bulbs are planted in fairly good soil. You can divide the clumps of bulbs every three seasons and replant the surplus.

Emperor is exceedingly large with deep yellow trumpet and perianth. Two hundred of these will make a splendid border, 30 feet long. $1.25 per dozen, $7.50 per 100.

Our Catalogue G lists varieties of all kinds, including rare and costly sorts as well as those which are better known. Send for a copy; we'll gladly send it free.

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Become a LANDSCAPE ARCHITECT

Prepare by mail for this uncrowded profession—

Inexpensive. Easy to master. Large income. Diploma awarded. Special proposition to HOME OWNERS and Plan for beautifying your property. Write to-day. L. W. Fisk, President.

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Have a Beautiful Blooming Garden
from April *until* October
by planting our reliable

Irises, Peonies and Gladioli

Now is the time to plant Irises and Peonies. We are growers and importers of the choice varieties. Over 600 varieties of Irises.

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Real Bronze Colonial Designs
From $4.50 Up
Memorial Tablets
Also other garden requisites
Manufactured by
The M. D. JONES CO.
Concord Jct., Mass.
Send for illustrated Catalogue

Bulbs—Peonies—Perennials

Our "Smiles of Spring Tulip Collection," 50, all colors. Specially selected. Postpaid $2.49. A smile of satisfaction in each bloom. Get Our Bulb and General Catalogs. Both are Free.

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DINGEE BULBS for Fall Planting

New Darwin Tulips, Hyacinths, Narcissus, Crocus, Lilies, Roses, Shrubs, etc., described in Autumn Edition of

Our New Guide to Rose Culture for 1921

Send for copy to-day. It's free. Offers the leading varieties of bulbs and plants for winter and spring blooming. Established 1850. Oldest Rose Growing Establishment in America.

The Dingee & Conard Co. Box 1037, West Grove, Pa.

Every question about the garden is answered in

"The Complete Garden"

By Albert D. Taylor, M. S. A.
Country Life Press

Eight Year Old Palmetto Asparagus Roots

For winter forcing in cellars and greenhouses

Giant Rhubarb Roots for Forcing

Twenty years in the root business has taught me that careful selection of forcing roots brings results. Price 8 year Asparagus roots $3.00 for 25; $5.50 for 50; $10.00 per 100. Price Forcing Rhubarb Roots (giant size) $3.00 for 12; $5.50 for 25.

Two year Palmetto Asparagus Roots for fall garden planting outdoors $2.00 per 100 and $12.00 per 1,000.

WARREN SHINN, *Root Specialist*
Woodbury New Jersey

A Treasure Chest of Flower Gardens

In this new catalogue of perennials there are rare treats for garden enthusiasts. Besides extensive stocks of Irises, Peonies, Phloxes, and other standard perennials, there are many rare plants, some of which cannot be obtained elsewhere. Accurate descriptions, and directions for propagating, have made this booklet valuable in many garden libraries.

My catalogue of "California Bulbs" is of unusual interest to people in the eastern and central parts of the United States, because of the many novelties listed, and the opportunity it offers to gain garden distinction.

Either or both of these catalogues will be sent upon request.

CARL PURDY
Box 90 Ukiah, California

Dutch Bulbs, Shrubs

We import the choicest varieties of bulbs from Holland. If you expect to get flowers from bulbs they must be planted in the fall. Now is the time to make your selection. Send for our new catalogue describing a complete list of our beautiful flowering bulbs, also Barberry hedges and other shrubs, trees and a complete line of nursery stock.

A. WASHBURN & SONS
Dept. C-10
Bloomington Illinois

Let Mock Oranges Brighten Your Lawn and Garden

What more inspiring sight than a well-grown specimen of Philadelphus or Mock Orange, with graceful branches bending under loads of snow-white, fragrant blossoms? Philadelphus coronarius, shown alongside, also called Sweet Syringa, is but one of a remarkable group of shrubs combining hardiness, attractive foliage and free flowering qualities in an extraordinary degree.

Besides *P. coronarius* we offer the golden-leaved form, *P. C. aureus*; *Philadelphus Avalanche* is a very fragrant, but smaller flowered type; *P. Gordonianum* is a late bloomer; *P. Grandiflora* is of particularly thrifty habit of growth. *Price any of above 5 kinds, 50c. each, $5.50 per dozen.* Plant these NOW for results next spring!

We would also refer you to our announcement in September Garden Magazine, describing ten flowering shrubs and offering one each of ten kinds for $4.50. This collection contains one Philadelphus coronarius

Unusual Service and a Catalogue

are yours to command here. We have always felt that Home gardeners are entitled to much more than just a plant-selling service. Besides giving safe advice on what, how and when to plant, we feel that the better we know your problem, the more can we help. This attitude has made us many staunch friends. We can use more. Will you make a start by writing for our catalogue NOW?

800 Acres

AMERICAN NURSERIES, H. E. Holden, Mgr.
Singer Bldg. New York, N. Y.

DARWIN TULIPS

Our Specialty

Where artistic color and graceful habit are desired, choose the Darwins. They are undoubtedly the most popular of all spring flowering bulbs. Below we offer,

Six of the Newer Darwins	Doz.	100
Aphrodite.—Exquisite clear silvery pink	$2.00	$15.00
Carl Becker.—Beautiful Salmon	.80	6.00
Glow.—Bright Scarlet	.75	5.50
Paul Baudry.—Purple violet	.80	6.00
Sir Trevor Lawrence.—Reddish violet, tinted copper	.80	7.00
Rev. Wally Dodd.—Deep violet mauve	1.00	7.50

6 of each of these varieties (36 bulbs) $3.00 postpaid
12 of each of these varieties (72 bulbs) $6.00 postpaid

These varieties are not as yet well known but each is a gem. They should be in every Tulip Garden.

A Garden of 100 Darwins $3.50 Postpaid

A select assortment including all the most desirable colors. This is a tulip bargain.

A Helpful Bulb Catalogue Free. Gives full descriptions of the best that can be had in Tulips, Hyacinths, Narcissi, Crocuses, etc. Send for copy.

See ad. in September Garden.

Bassi Frères de Paris

Seedsmen **New Rochelle**
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The Famous Rose Hill Nurseries

North Avenue, New Rochelle, N. Y.

A wonderful collection of Ornamental trees, both Deciduous and Evergreen. Complete stocks of Peonies, Irises, Delphiniums, Phloxes and many other Perennials.

Must Be Sold

Entire nursery stock must be sold to settle estate. This is a rare opportunity to secure specimen trees and shrubs at remarkably low prices.

Several thousand large Box trees, (Buxus)
Hundreds of Koster Blue Spruce
Large blocks of large size Conifers. These must be seen to realize their beauty and size.

ROSE HILL NURSERIES

North Avenue

New Rochelle **New York**

Nurseries near Wykagyl Station on New York, Westchester & Boston

Dwarf Fruit Trees

A letter from another of our enthusiastic customers

Read what he says—

Mr. C. C. McKay
Geneva, N. Y.

Dear Sir:

I am enclosing a picture of a little tree that has made..... famous and the Mecca of scores who could not believe the current reports and hardly believe their eyes, and without exception declared they had never seen or heard anything like it.

The tree is a *Dwarf Scarlet Beauty Apple.* It was set out May 17, 1917 and is therefore two and one half years old. In 1918 it had many blossoms but only one apple was allowed to mature which weighed seven ounces, a big one. This year its second, it was loaded with blossoms the most of which were pinched off. It has matured 9 large perfect apples totalling three pounds ten ounces in weight, an average of six and one half ounces each—almost uniform—of a very deep rich scarlet color and flavor like a McIntosh Red.

The tree is about knee high or to be exact twenty six inches as you will note by comparing it with the yard sick in the picture.

Very truly,
B. S. H.

Oct. 9, 1919, Albany, N. Y.

Catalogue Mailed Free

THE VAN DUSEN NURSERIES

C. C. McKay, Mgr. **Box G, Geneva, N. Y.**

Peony Buying Simplified

IN issuing a condensed list of the best fifty medium priced Peonies we feel that we are rendering home gardeners a timely service. To choose from nearly 1000 varieties with any degree of satisfaction is impossible except to elect few. Price is not always a safe guide either, since a fifty dollar Peony could not possibly be a hundred times more beautiful than a fifty cent variety. The most expensive sort in our special list costs $1.25.

Fifty Distinct Iris
all medium priced

Twenty cents buys as good an Iris as Two Dollars or Twenty. We decided years ago, that we would make our bid for business on a popular price basis. The price does not affect the quality of our roots and plants, however,—*that* quality must satisfy the buyer or we want to know.

Please write for our special Iris and Peony folder TO-DAY.

HOFFMAN PEONY GARDENS

HUDSON **OHIO**

¶ ***"Homing with the Birds"*** *(by Gene Stratton-Porter). A human book about birds by a naturalist and a novelist, blending authoritativeness with narrative charm. Net, $2.00. At all booksellers'.*

Movilla Peonies

Awarded Gold and Silver Medals by

American Peony Society

New York — Philadelphia — Reading
1916 1917 1920

¶ We give our entire time and attention to cultivating the *best.*

¶ We waste no effort or expense growing inferior varieties.

¶ We have all the newest and best American and European Introductions.

¶ Send 30 cents for descriptive catalogue with symposium ratings or send a postal card for free price list.

Movilla Gardens
Haverford, Pa.

Franklin's Seedling Peonies

One of the most prominent peony connoisseurs in this country possessing a collection of nearly one thousand varieties, writes us as follows:

"**Mabel L. Franklin** was a prize with us this year and has no reason to apologize for her position among the aristocrats of our garden."

June Day, W. F. Christman, Ball O'Cotton and others fully described in our new catalogue are in the same class. These varieties should be in every fine collection. Write for catalogue.

FRANKLIN NURSERY
(Richfield Station) **Minneapolis, Minn.**

IRIS and PEONIES

If you want them *when* you want them try us. We dig the day the order is received and ship the same day or the next. Free Price List.

GEO. N. SMITH, Wellesley Hills 82, Mass.

"LILIUM REGALE"

HORSFORD'S HARDY LILIES
And *Cold Weather* Plants

This new Regal Lily is the finest novelty that has been offered in years. Our Hardy Perennials, Wild Flowers, Iris, Peonies, Hardy Ferns, Vines, Shrubs, and Trees which we grow here have always given satisfaction when properly set. Trees and Shrubs that we have found tender in severe winters have been discarded from our lists. Ask for our Autumn Supplement and Fall Price List before making up your list of wants.

F. H. HORSFORD
CHARLOTTE **VERMONT**

All America is talking of the War Letters of Walter H. Page

Newspapers and periodicals all over the country are referring to them as holding a wealth of interest—and readers without an exception agree with President Wilson and Col. House in pronouncing them remarkable letters—President Wilson himself said: ***"They are the best I ever read—I hope they will be published."***

They are now appearing in The WORLD'S WORK. The October installment in The WORLD'S WORK tells of America's secret efforts in 1913 for Disarmament; the November installment describes vividly the day of terror in London when the "Grand Crash" came in August, 1914. And besides there are ten other timely features of universal interest in every number of The WORLD'S WORK.

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GARDEN CITY, NEW YORK

Send $2.00 for a seven months' trial subscription—mention this offer

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along with Country Life, Garden, Short Stories, Educational Review, La Revista del Mundo

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ENHANCE the charm of your home by planting White Flowering Dogwood this fall. They are ideal plants and the most beautiful of small trees. We are well stocked with shrubs, trees and hedges of all kinds. Orders are now being received for October and November shipments. Send for our catalogue and price list to-day.

The Morris Nurseries
Box 804, West Chester, Pa.

Farr's Lovely Lilacs

There are many new varieties at Wyomissing, originated by the famous French producer, M. Lemoine, which bloom more freely and produce much larger trusses than the older types. These Lilacs, which are essential to every well-planned garden, should be planted this month; in early spring you will be rewarded with beautiful blooms, and with a fragrance not surpassed by any other shrubs.

Philadelphus and Deutzias

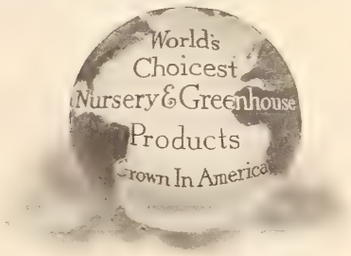
in a large range of varieties, originated by M. Lemoine, are also found in my collection. These French hybrids are particularly attractive because of their extra large flowers and delicate colorings. October and early November are the ideal times for planting.

Farr's Hardy Plant Specialties

seventh edition, 1920, is a book of over a hundred pages, containing a full descriptive list of all the material used by landscape gardeners, with illustrations of Lilacs in natural color and many other photographic reproductions of rare shrubs and hardy plants. Too costly for miscellaneous distribution, but a copy will be sent on receipt of $1, which sum will be deducted from your first order amounting to $10.

BERTRAND H. FARR
Wyomissing Nurseries Company
104 Garfield Ave. Wyomissing, Penna.

Bobbink & Atkins



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Evergreens
Rhododendrons
Trees and Shrubs
Rock Garden Plants
Old-Fashioned Flowers
Fruit Trees and Bushes

Ask for our special Rose Catalogue, list of Rock Garden Plants, Peonies and Iris and Pot-grown Strawberries.

We Are Growing Sufficient Nursery Products to Complete Plantings of Any Magnitude.

Nurserymen and Florists

Rutherford New Jersey

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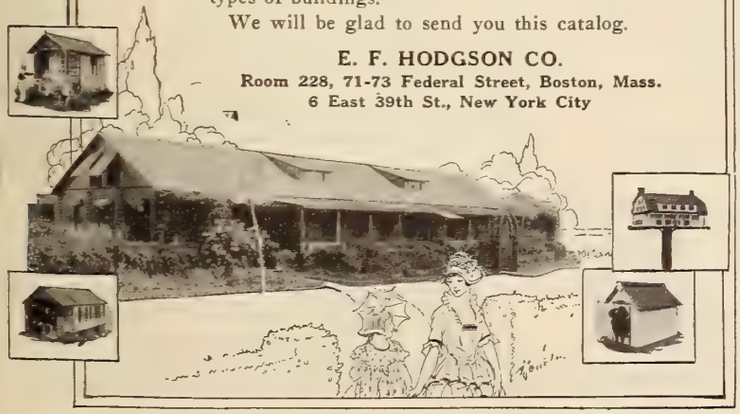
IT HAS TAKEN YEARS of hard work and experience to bring Hodgson Portable Houses to their present point of perfection. But the time and effort have been well spent. For they have rewarded not only the makers but every owner of a Hodgson House.

When you buy a Hodgson House you have the finest portable building that you can secure. To begin with it is made of the best materials that can be had. It is constructed by men who have devoted a lifetime to making fine buildings. And the result is a house that will stand for years and years—in all kinds of weather.

Our illustrated catalog will give you a clear idea of the beauty of Hodgson Houses and the innumerable purposes for which they are used. It contains, too, a list of prices of the different types of buildings.

We will be glad to send you this catalog.

E. F. HODGSON CO.
Room 228, 71-73 Federal Street, Boston, Mass.
6 East 39th St., New York City



OFFER No. 2
SIX CHOICE EVERGREENS 18" TO 24" HIGH

OFFER NO. 1 6 ARBORVITAE AND BOX $5.00 PLANTS ABOUT 1 FOOT HIGH

Little Tree Farms

Special Introductory Offers

Offer No. 1 SIX ARBORVITAE AND BOX, $5.00
The Live Evergreen Window Box completes the home picture. Plants illustrated come packed in a neat wooden box, three feet long, seven inches wide and six inches deep, painted green. Price includes packing and delivery to Express or Post Office, Framingham, Mass. *Remittance with order.*

Offer No. 2 SIX CHOICE EVERGREENS, $5.00
Selections includes *two* White Spruce, *one* Douglas Fir, *two* Arborvitae, *one* Red Pine, 18" to 24" high. Regular Little Tree Farms quality. Shipped in one unit with roots carefully packed in moss. Done up in burlap. Average shipping weight, twenty-five pounds. Price includes packing and delivery to Express or Post Office, Framingham, Mass. *Remittance with order.*

Send for "Book of Little Tree Farms"
Beautifully illustrated. Containing new ideas of landscape decoration and just what you want to know about trees and shrubs—their planting and care. Used as a reference work. Listed in U.S. Dept. of Agriculture library.

Little Tree Farms
AMERICAN FORESTRY COMPANY
BOSTON U. S. A.
DEPT, A-10

Also send for "Little Tree Farms Special Offer Bulletin No. 10."

Gene Stratton-Porter's

most engaging character is this true child of Nature

HER FATHER'S DAUGHTER

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A Daughter of the Land
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Michael O'Halloran
The Song of the Cardinal
Moths of the Limberlost
Morning Face
Music of the Wild
Homing With the Birds

LINDA STRONG'S inheritance from her remarkable father includes an abundant fund of love for Nature and people. She understands both, with a quick, sympathetic devotion.

And it is Linda's deep capacity for love that sends her merrily through the adventures of this romance of sunny California—until, finally, when she has won your heart as well as the hearts of her true-blue comrades, she finds happiness and a home in her native Lilac Valley.

Applause for Gene Stratton-Porter has been expressed in the purchase of nine million copies of her works. *Her Father's Daughter* is delighting both the lovers of her Nature books and the admirers of her fiction. Throughout the lovely, realistic atmosphere of these California gardenlands, and the happy surprises of the story, radiates always the winning personality of Linda Strong.

Get an early copy of Her Father's Daughter

At all booksellers; $1.75 net

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FOR SALE
30 BAY TREES in tubs
30 by 28 inches. Specimen trees both Standard and Pyramid. For particulars address
H. H. MILLER, Peapack, New Jersey

Holland Bulbs
Write to us for prices on Tulips, Hyacinths and other Bulbs for Fall planting.
Edward T. Bromfield Seed Co.
GARDEN CITY ~ NEW YORK

ANDORRA
Ornamentals exclusively, distinctive in quality and variety, for street, park and all civic planting
We cater to the most discriminating trade.
ANDORRA NURSERIES
Have you seen ANDORRA?

IRIS
We offer for the first time varieties produced by Bliss, Morrison, Sturtevant, and Williamson. Also the best of the old.
The Glen Road Iris Gardens
Grace Sturtevant, Prop.
Wellesley Farms, - - Mass.

IRON AGE
Farm, Garden and Orchard Tools
SEND FOR BOOKLETS
BATEMAN and COMPANIES, Inc., Grenloch, N. J.

(*Continued from page 108*)

eased vines. The only use of spraying is to kill or repel the striped cucumber beetle. Careful experiment was made in which certain plants were screened to keep the bugs away, and in every case, these screened vines remained healthy while those all around them died. The method of the control seems to centre almost entirely in the destruction of wild Cucumbers and the elimination of the cucumber beetle. Like many other insect problems, this is easier said than done, for the beetles are a hardy lot and thrive on many of the numerous insect poisons.

There is some reason, also, to believe that the disease may be carried over on Milkweeds, although this has not definitely been proved to be the same form of "mosaic."

H. F. BUTTON, *Farmingdale, L. I.*

BIRD BOOKS FOR THE GARDENER

FOR the gardener who wants more detailed planting lists than those on page 77 of this issue and some account of the birds themselves and of the several ways their friendship may be won, there are—among the many bird books published—four of especial value in this connection; a modest quartet which accommodatingly occupy a mere five inches.

Niel Morrow Ladd's "How to Make Friends With Birds" (Nature Guide Series, Doubleday, Page & Co.) is a pleasant little volume to handle, presenting a remarkable amount of information in remarkably concise and attractive form. Of primary interest to gardeners is the portion dealing with plant materials. Here the commuter finds what trees or shrubs will transform a corner of his small suburban grounds into a haven for feathered folk; the farmer learns the profitableness of preserving wild fruits and berried vines along his boundaries; there is suggestion for the estate owner interested in game; there are illustrated lists of berry-bearing shrubs, of seed-bearing flowers, of trees affording winter food, and of which birds frequent them.

The gardener sufficiently interested in these industrious little allies to care for a more personal acquaintance with them will find that winter has its distinct advantages: leisure is greater, birds fewer and more easily identified. A particularly convenient means of identification is found in Frank M. Chapman's "Our Winter Birds" (D. Appleton & Co.) where instead of conventional endpapers front and back, the reader comes upon accurate portraits in color of our "Permanent Residents" and "Winter Visitants," some eighty-odd all told. These and the supplementary illustrations by Ernest Thompson Seton and Edmund J. Sawyer make it easy for the student to recognize the living birds when seen. The pages of descriptive text, informal, friendly, intimate, and authoritative, send the reader outdoors with new eyes and understanding.

Ernest Harold Baynes' "Wild Bird Guests" (E. P. Dutton & Co.), much larger in physical bulk than either of the preceding books, is also somewhat larger in scope and discusses rather fully the value of birds, both economic and aesthetic, why it is worth while to give them protection and how it may best be done. It in-

(*Continued on page 120*)

FORMAL GARDEN BORDERED WITH BOX-BARBERRY

Two new hardy hedge plants, now ready for you

BOX-BARBERRY

For beauty, symmetry and endurance. It solves the problem of a dependable edging or low border hedge.

IBOLIUM PRIVET

A sturdy and dependable plant for larger hedges, resembles California Privet but much hardier and does not winter-kill.

Write us concerning your further needs. We have 200 acres of as fine ornamental nursery stock as can be found in the United States. Fall planting Booklet sent on request.

THE ELM CITY NURSERY CO.
WOODMONT NURSERIES, INC.
(Near Yale Bowl) **Box 191, NEW HAVEN, CONN.**

HOLLAND BULBS

Darwin, Cottage, and Early Tulips, Hyacinths, Narcissi, Crocuses, etc., of exceptionally fine quality. *Order early while assortment is complete.*

PEONIES

Best varieties in strong clumps.

PHLOX and IRIS

in Vigorous, Field-Grown plants.
New and choice sorts.

It is planting time now.
Send to-day for our Catalogue.

FRANKEN BROTHERS, Deerfield, Ill.

Don't Plant Bulbs

or do any Fall planting of lawns, flowers, shrubs, trees or fruit until you have made your soil rich and fertile with

Wonderful blooms in early spring together with rich green foliage and a beautiful turf will pay handsomely for proper preparation of your soil with this unequaled natural fertilizer; effectively sterilized, dependable, convenient.

A Whole Wagon Load of Manure in a Bag

Insist on Wizard Brand at your seed store or write us direct for full information.

THE PULVERIZED MANURE COMPANY
20 Union Stock Yards **Chicago**

Which Would You Grow, out of 800 Varieties?

What is it worth to you to learn about the relative merit of 800 different varieties? That is the number I have grown during my 41 years of making Peonies my hobby and I assure you, there is no greater hobby! All I have learned about Peonies is yours for the asking—gladly!—and no doubt your questions will teach me additional facts.

May I Help You in Making Selections?

Give me an idea which colors appeal to you and I will gladly suggest sorts within the limit of your Peony appropriation. Remember please, that buying Peonies is an *investment!* Your capital increases faster than any money in the bank. And because I want more Gardeners to love Peonies as I do, I have made it a point to offer two Introductory collections. I will send

8 Named Peonies for $2.50
or
15 Kinds for $5.00—All Good

With Every $5.00 Collection 1 John Richardson Given Free

You can count on their being fine named varieties (worth much more in catalogue value) because I shall depend on these collections to make of you a friend of Peonies in general and *Gumm* Peonies in particular. And, lest you forget, this is *the* month to plant the roots, so please order at once.

Those wishing to get acquainted first with my complete collection are welcome to a copy of my Catalogue offering Peonies exclusively.

W. L. GUMM, *Peony Specialist* **Remington, Ind.**

Beginning an important, new, nation-wide service

"Tel-U-Where"

"Tel-U-Where" is a chain of information bureaus to help you find any *advertised* product you want to buy

The advertisements in your favorite magazines suggest *what* to buy–"Tel-U-Where" tells you *where* you can buy it. Simply call your local bureau and give the name of the product you want, and "Tel-U-Where" will mail you at once descriptive literature about the product and a list of the dealers in your city who sell it

Manufacturers subscribe to "Tel U Where" to make it easy for you to find their products, so there is *no charge* for information given

Look for "Tel-U Where" in your phone book, call the number, give your name and address, and the name of the article you want, and "Tel-U-Where" will mail you the information at once

If you ask for a product not yet listed with Tel-U Where, that is to say, when the manufacturer is not yet a subscriber to the service, "Tel-U-Where" will get the information for you, but there will be a few days delay

No charge—no red tape—just phone.

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To direct you to the dealers carrying the advertised goods you want

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"MY IDEAL HOME"
DAVID·BELASCO BY JOSEF·HOFMANN
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The Last Word in Beautiful Homes

THE exquisite flavor of the bungalow, the stately Colonial Home, the mansion of stone, the enduring beauty of the house of brick—scores of beautiful homes of all descriptions. You can make your choice from the most profuse collection, each with architectural, landscape, and decorating plans complete.

The October Country Life for only fifty cents is the very latest and most complete homebuilder's manual in existence. There are homes for every income, from the "Home-sweet-home" of the $5000 income to the imposing mansion of the $50,000 income.

Your Ideal Home

What would it be? David Belasco, theatrical producer; Gene Stratton-Porter, Novelist; Josef Hofmann, Pianist—each has designed his ideal home. They are three unusual houses and we have reproduced them in full color. Don't miss this great number of Country Life.

Why not have Country Life come to you regularly—trial subscription 7 months for $2.00 ($5.00 a year). October, now ready to mail, is the Homebuilders' Manual; November is the Interior Decorating Manual, and so on.

Country Life

Garden City New York

—a Doubleday, Page and Company Magazine along with THE WORLD'S WORK, GARDEN MAGAZINE, SHORT STORIES, LA REVISTA DEL MUNDO, EDUCATIONAL REVIEW.

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Rhododendron Maximum. In car lot.
Rhododendron Catawbiense. In car lot.
Rhododendron Carolinianum. In car lot.
Kalmia Latifolia. In car lot.
Fruit Trees and Fruit Plants.
Ornamental Trees and Shrubs.
Pot-grown Strawberry Plants. The latter for shipment between July 15th and Oct. 1st.

Send list of wants for price

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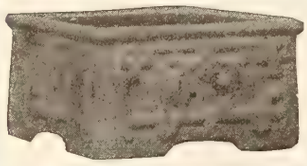

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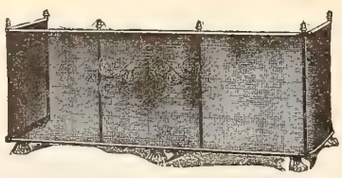

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(Continued from page 116)

cludes chapters on bird-house construction, the organization of bird-clubs, and some comprehensive lists of materials to be planted; leaving the reader convinced of the necessity for doing something about the bird, and doing it promptly!

That indispensable aid to general gardening, Albert D. Taylor's "The Complete Garden" (Doubleday, Page & Co.), has some very helpful suggestions on planting for the birds, brief and yet so inclusive that even "Perennials for Attracting Humming Birds" are listed. As a practising landscape architect of wide experience and more than average skill, Mr. Taylor is specially fitted to know whereof he speaks, and his suggestions are, in consequence, of special value to the gardener.

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HEADING CABBAGE DURING WINTER

MOST garden makers who grow Cabbage for winter use have had the experience of freezing weather arriving before some of the plants have developed eatable heads. Usually these slow-heading plants are left standing in the garden over winter—a total loss—or possibly are fed to poultry or other stock if one has such. A chance occurrence a few years ago led me to try a scheme for finishing off these slow-heading plants during the winter.

One spring I found that several plants which had been protected through the winter by a deep pile of tree trimmings and wind blown leaves, had formed good heads during the winter. This gave me the idea of experimenting with such slow growing plants the following fall.

As these plants were scattered over the cabbage plot, I made a wide (3 ft.) and shallow (10 in.) trench in the most sheltered part of the garden. Then the plants were dug up with a spade and reset in this trench in their natural growing position. They were set in a compact double row and as close together in the row as possible without pressing the leaves of one plant against another. Transplanting done, a piece of 3 inch wide plank was sharpened and driven into the ground at each end of the double row, and a stout pole—about 2-3 in. in diameter—placed atop, making a "ridge-pole." This ridge-pole is about 9½ inches above the tops of the Cabbage plants. Short boards were placed close together and on end from the ridge-pole to the ground at edge of trench forming a roof. On this roof a thin layer of old Potato vines, etc., was placed and then an 8 in. layer of earth—or, enough to keep the soil of trench from freezing. The old vines are to help keep the soil in place on the slanting roof. The ends of this shed are closed by driving pieces of board or old barrel staves into the ground against which a mat of evergreen boughs is placed. A heap of leaves or bundles of straw instead of the boughs would do as well, of course. At the ends next to the ridge-pole a small opening is left in the boarding for ventilation. But I have not experimented on the size of this to find out just how much is best.

After a mild winter this shed was opened in mid-March and nearly every plant had formed a good firm head, more delicate in flavor than the outdoor grown ones.

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It may be only a modest place, yet radiate a warmth of repose in comparison with which even the most elaborate establishment seems cold, austere, uninviting. *And all because its surrounding Shrubs and Trees have been properly selected!*

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The early 'till late berry

SHOULD BE PLANTED IN EVERY GARDEN

Conceive the joy and satisfaction of having such berries on your table all through the summer and autumn, the source of wonder to your neighbors, that you can pick the **finest raspberries from the latter part of June until the snow flies.** On November 20th we cut a large branch of the Erskine Park with blossoms, green berries and ripe fruit upon it.

The plant is by far the strongest growing raspberry we have ever seen. It branches like a tree and it also has the largest and most roots of any with which we are acquainted.

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GARDEN TREASURES FOR OCTOBER PLANTING

Mr. Plant Lover— More than half of the following list are the new things that the Arnold Arboretum has been trying to get you to plant. These plants are guaranteed to grow satisfactorily. Be the first to have the fun of growing them:

Hawthorn. From the famous collection of John Dunbar, Highland Park, Rochester. Plants 1½-3′ $0.75 each; $6.00 per 10; $50.00 per 100.

Winterberry or Black Alder. 1½′ $0.60 each; $5.00 per 10; $40.00 per 100.

Japanese Dogwood. Rare, sweet globular fruit, flowers like the white, but a month later. 3′ $1.00 each; $7.50 per 10; $60.00 per 100.

White Dogwood. 5′ $1.50 each; $12.50 per 10; $100.00 per 100.

Red-flowering Dogwood. 5′ $6.00 each; $50.00 per 10.

Chinese Christmas Berry. Red berries like its relative, the Shad-bush, in December. 3′ $0.50 each; $4.00 per 10.

Turquoise Berry. Symplocus paniculata. 1′ $1.00 each; $7.50 per 10.

Mulberry. Morus acidosa. New species introduced by Arnold Arboretum. 3′ $0.75 each; $5.00 per 10.

Shad-bush. Amelanchier canadensis. The first white flower to bloom. 1½′ high, $0.50 each; $4.00 per 10; $25.00 per 100.

Amelanchier spicata. Dwarf shrub of the pine barrens growing 3′ high. 1′ $0.50 each; $4.00 per 10.

Japanese Holly. Ilex crenata. Small evergreen leaves, black berries. 1′ $1.00 each; $9.00 per 10.

Aronia melanocarpa. Black Chokeberry. Feeds the birds all winter; used for mince pies in Maryland. Clumps $1.50 each; $30.00 per 100; $150.00 per 1000.

Crab Apple. Ten varieties. The fruit is delicious when frozen and decayed in the winter. 2-4′ $1.50 each; $12.50 per 10.

Beach Plum. Prunus maritima. Beach plum jam is good for school lunch and the birds like the fruit. Here is an opportunity to make a hedge on sand dunes or cover a sandy field. 1½′ $0.40 each; $2.50 per 10; $20.00 per 100

Bayberry. Myrica cerifera. Thrives with the above, berries make fragrant candles. 1½-3′ $0.30 each; $2.50 per 10; $20.00 per 100.

Barberry. 3 rare species, amurensis, aristata and heteropoda. 2′ $1.00 each; $7.50 per 10.

Arrowwood. Viburnum dentatum. 2′ $0.75 each; $6.00 per 10. If you want big shrubs try these 5-7′ high and the next 4-6′ high at $3.00 each; $27.50 per 10; $250.00 per 100.

Swamp blueberry. Vaccinium corymbosum. 2′ $2.00 each; $17.50 per 10; $150.00 per 100. Mix in oak leaves or peat. Learn how to grow the varieties developed by Prof. F. C. Coville, U. S. Botanist. They are ¾″ in diameter. They represent the greatest achievement in plant breeding of fruit adapted to acid soils.

American Holly. Ilex opaca. 1′ $2.50 each.

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For the boundary of your garden you can plant in October carloads and truckloads of Pines, Spruce, and Fir 5 to 15′ high, and later add a Live Christmas Tree. For big trees plant in October broad oak, fragrant honey-producing Linden or a Maple. They will save you 5 to 25 years. Send for "Home Landscapes" a helpful catalogue. In October you can plant all the hardy flowers shown in this picture and many others. You can plant Hazelnuts, Japanese Walnuts. The best way is to come to the nursery, load up your car or order a truckload. If you want a new hobby, take up cover plants for carpet under shrubs, as wintergreen, arbutus, myrtle, etc. **Hardy flowers for October planting, in mixture, our selection $8.00 per 100.** Send for bargain list giving full description.

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Chrysanthemums

OLD FASHIONED GARDENS

Sun Dials
Sweet Peas

GARDEN MAGAZINE

VOL. XXXIV. NO. 3.

Cover Design by Félicie Waldo Howell

Doubleday, Page & Company, - Garden City, New York

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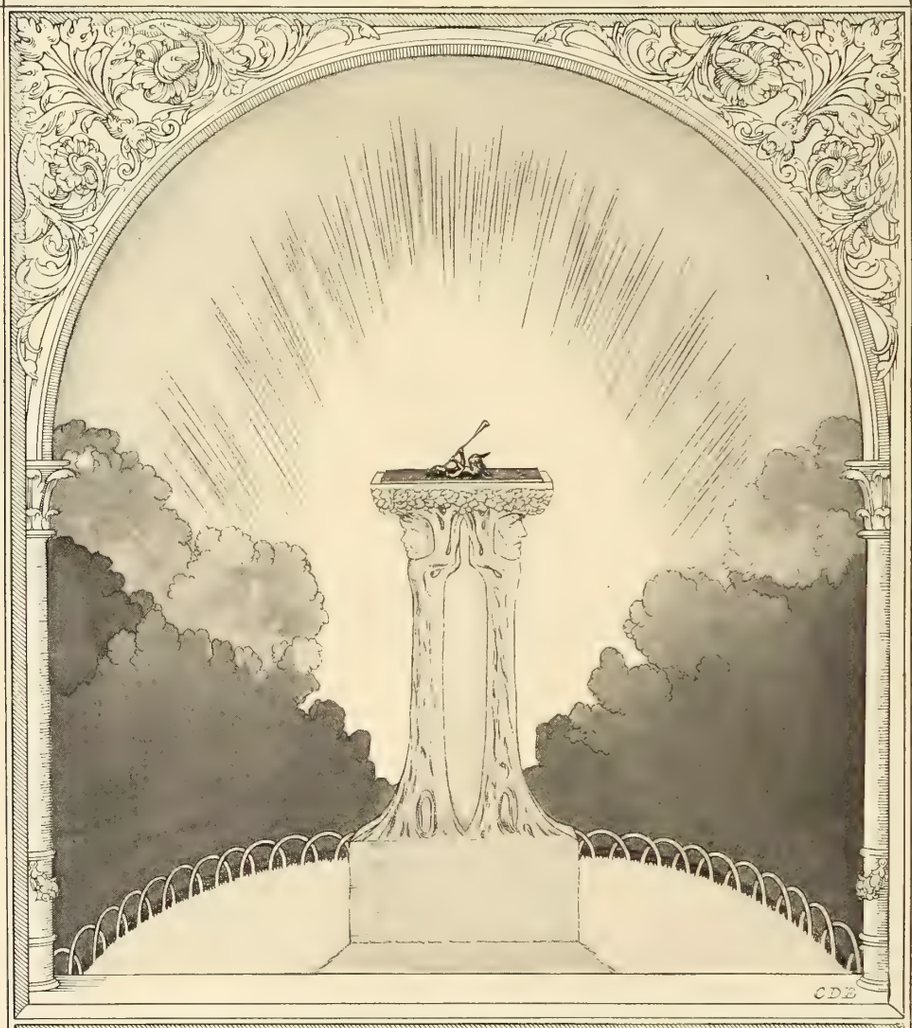

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Winfield Slocombe—A glowing orange decorative, free bloomer, good keeper, and stunning color.
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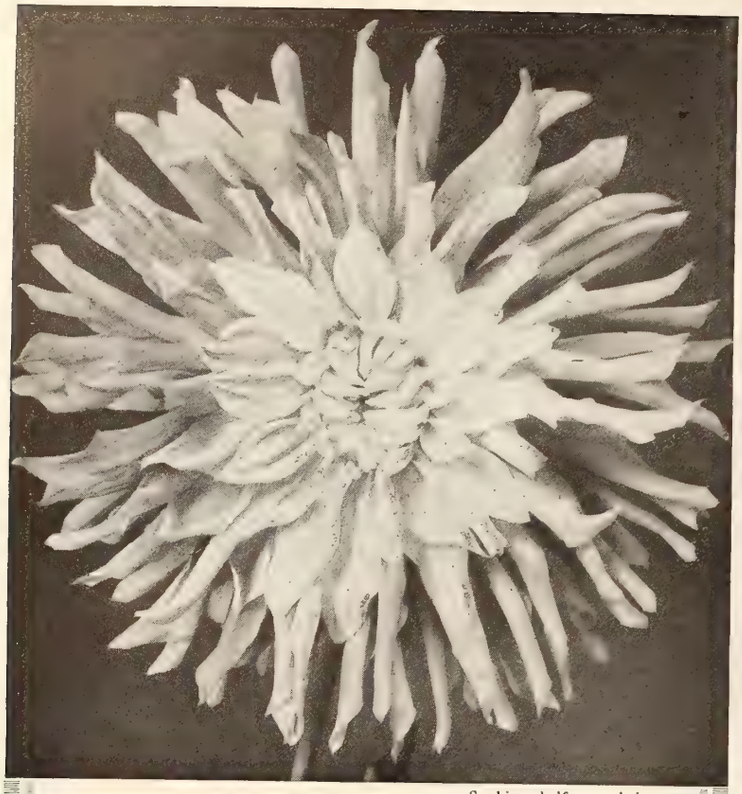

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NOVEMBER, 1921

THE GARDEN MAGAZINE

CONTENTS

COVER DESIGN: ZINNIAS - - - - - - - - *Félicie Waldo Howell*

PAGE

THE OLD-FASHIONED DOUBLE ROSE - - - - - - - - - - 125
Photograph by Harry G. Healy

A GARDEN VISTA - - - - - - - - - - - - - - - - - - 126
Photograph by Thomas Ellison

CHRYSANTHEMUMS ALONG THE GARDEN WALL - - - - 127
Photographs by Arthur G. Eldredge

THE MONTH'S REMINDER: WHEN TO DO WHAT YOU WANT TO DO - 128

OLD-FASHIONED GARDENS THAT CONTINUE TO CHARM *Louise B. Wilder* 130
Photographs by Mattie E. Hewitt and Francis B. Johnston; drawing by Velma Simkins

FOLLOWING THE CHRYSANTHEMUM TO THE LAND OF ITS INHERITANCE - - - - - - - - - *Kiyoshi Sakamoto* 133
Photographs by the author

THE FLOWER OF NOVEMBER - - - - - - - *Jane Leslie Kift* 136
Photograph by E. J. Wallis

COUNTING THE SUNNY HOURS - - - - - - - *G. B. Arthur* 138
Drawing by the autho and photograph by Arthur G. Eldredge

SUGGESTIONS FOR THE GARDENER'S CHRISTMAS - - - 140
Photographs supplied by The Gorham Co., Amy Richards Colton, Ovington Bros. Co., Royal Copenhagen Porcelain and Danish Arts. Photographs taken by Wm. C. Eckman, F. M. Demarest, and Jane Leslie Kift.

A SIXTEENTH CENTURY HERB GARDEN - *H. H. Manchester* 142
Illustration supplied by the author

THE GENTLE ART OF SIMPLING - - *Sheba Childs Hargreaves* 143

WINTER PANSIES (Poem) - - - - - - - - *Louise Driscoll* 144

THE TREND OF THE DAHLIA - - - - - - - - - - - - 145
Photographs by Leonard Barron and Adolph Kruhm

WINTER GARDENING FOR A SPRING START *W. L. Wilson* 148
Photograph by the author

THE GARDENS AT STONECROFT - - - - - - - - - - - 149
Photographs and plan supplied by Wm. Pitkin, Jr.

THE NEW CRAFT OF MAKING PLANTS TO ORDER
Photographs by the author *J. L. Collins* 152

SWEET-PEAS FOR EASTER - - - - - - - - *George W. Kerr* 155
Photographs by the author

AMONG OUR GARDEN NEIGHBORS: WHEN PLANTS ARE BROUGHT INDOORS - - - - - - - - - - - - - - - 157

THE OPEN COLUMN - - - - - - - - - - - - - - - - - 158
Photographs by R. H. Moulton, Henry W. Sloan and others

LEONARD BARRON, Editor

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MENTOR ***OHIO***

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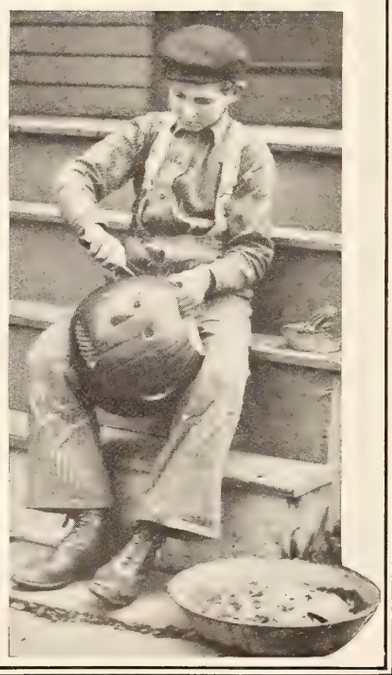

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The Garden MAGAZINE

Vol. XXXIV, No. 3 — November, 1921

Harry G. Healy, Photo.

"* * * THE WATCHING FACES
OF GARDEN FLOWERETS, WHICH OF OLD SHE LOVED"
Francis Ledwidge

The "old-fashioned" double Rose has for generations graced the gardens of farmhouse and manor and has been cherished by their mistresses for its bright friendliness and fragrance. Hill Girt Farm, Cossart, Pa., C. W. Leavitt, Landscape Architect

Thomas Ellison, Photo.

"IN ALL MY AUTUMN DREAMS
A FUTURE SUMMER GLEAMS,
PASSING THE FAIREST GLORIES OF THE PRESENT!"
George Arnold

In landscaping as in the other arts a hint of mystery, of gradual revealment gives play to the imagination and keeps the spectator pitched to pleasurable expectancy. Home of Mr. William S. Walbridge, Toledo, Ohio; William Pitkin, Jr., Landscape Architect. (The Walbridge gardens are pictured on pages 152, 153)

Arthur G. Eldredge, Photo.

"FLAUNTIN' CHRYSYS, 'BOUT TO DIE,
WAVIN' TO DE YEAH 'GOOD-BYE,'—
SOMETIMES THINK IT'S BEST OF ALL,
IS DE GYARDEN IN DE FALL."
Charles William Brackett

Chanting defiantly of summer glories while days shorten and frost creeps stealthily nearer, the Chrysanthemum is perhaps the most appreciated of garden flowers—gallantry in the face of certain disaster always holds a thrill for the spectator—and then the glowing gamut of color, gold, tawny, and deep russet, heartens and warms on the bleakest of November days. Garden of Mr. C. L. Blair, Peapack, N. Y., adjoining the breakfast room. Jas. L. Greenleaf, Landscape Architect

WHEN TO DO WHAT YOU WANT TO DO

The Month's Reminder

NOVEMBER—THE MONTH OF GETTING UNDER COVER

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practice. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

(*Copyright, 1921, Doubleday, Page & Co.*)

DURING this month prepare for the winter, gathering up covering material for the hardy borders, etc., to be put on *after the ground is frozen.*

Clean up remnants of the year's crops, making the place clean and tidy with everything in readiness to make a quick start next year.

Growing plants indoors will now become a central interest and, as outdoor activities cease, it is time to start "paper work" for the new season. Make plans, and then remake them and give consideration to all the things of interest noted during the year with a view to ordering in due season.

Protecting Evergreens

Protect specimen evergreens by Pine and Spruce branches worked into a network of wire attached to posts driven into the ground about the plants. This is preferable to driving the ends of the cut branches into the ground. Protecting specimen evergreens by wrapping in straw needs some care, because if the circulation of air be interfered with damp rot will be caused. Wrapping with burlap is to be preferred to wrapping with straw.

Most evergreens, and particularly those which need protection during the winter, have a greater quantity of surface roots than other trees which makes mulching essential to protect them from alternate freezing and thawing. A heavy mulch of leaves or manure with plenty of litter in it are ideal protectors.

Continue Tree and Shrub Planting

The planting of deciduous trees and shrubs may be continued as long as the ground remains open even if that means all winter. Remember everything done now is a relief from the spring rush. But remember to mulch when planting is completed, and the ground has been frozen several inches deep. This is the one important detail.

Storing Dahlias

When digging Dahlia roots do not let them lay exposed to the sun for more than two or three hours before being carried to the storage cellar. Store them upside down, to drain from the base of the old stems any moisture, which otherwise not infrequently causes decay during the winter.

The best method of wintering Dahlias is to cover them with moist sand, on the floor of a frost-proof cellar.

Late Bulbs

In the event of the ground freezing before Hardy Lily bulbs arrive, they may be potted up, and wintered in cold frames with excellent results if watered properly. They cannot make any root growth in dry soil, whereas if watered carefully, they will make roots, and be ready to grow apace when planted out in the spring.

Window Boxes House Plants

The window boxes may be made to extend their mission of cheer and beauty through the winter months if they are filled with evergreens such as golden and green Retinisporas, Evonymus, Boxwoods, Hemlocks, Ivies, etc. Or branches of White Pine, Holly, Laurel, Cedar, etc., may be stuck into sand, which is placed in the boxes. To give variety, among these may be placed bunches of red Sumac berries, Hardy Hydrangea flowers, or Straw-flowers; also still available are the Barberries, Bittersweet, Cat-tails, etc., and by keeping a few crumbs on the window sill for the birds through the long winter days, one can secure a world of beauty and pleasure.

House plants troubled with insect pests, if not too large, may be inverted and dipped for a few seconds into water heated to 140 degree F. to kill green fly, red spider, etc.; also to wash off the dust.

Saving the Late Vegetable Crops

Celery to be stored some time during the month. All root vegetables to be dug without delay and stored in trenches; or an old box or barrel buried in the ground may be utilized. Better still is to store in moist sand in a cold frost-proof cellar.

Put Cabbage in trenches upside down and cover the heads.

Cut off the tops of the Asparagus plants and burn them. Cultivate between the rows, and when the ground freezes apply a mulch of manure.

Protect French Globe Artichoke by laying some fine brush over them before covering with corn stalks or other coarse litter.

Late crops of Lettuce outdoors will keep for a long time if protected with hay, straw, or leaves. If frost is too severe to handle outdoors, lift the plants and store them upside down on a cool cellar floor. If the supply of Brussels Sprouts exceeds the needs of the family, the surplus may be lifted and stored in trenches, like cabbage.

Squash and pumpkins to be stored in a dry, cool cellar before frost touches them.

Potatoes in storage to be picked over. A greater percentage of bad tubers will be found now than at any subsequent period.

Cold frames where Cabbage, Cauliflower, and Lettuce have been planted will require regular ventilation by lifting the sashes on warm days. On the approach of cold weather, straw mats, burlaps, and shutters will be a great protection.

Vegetable Delicacies to be Had

In the cool house grow Beets, Cauliflower, Parsley, green Onions, Radishes, and Spinach; with Asparagus, Sea-kale, and Rhubarb under the benches. In the warm house, String-beans, Bush limas, Cucumbers, Melons, Tomatoes. Start Mushrooms now.

In the Fruit House

Prune Grape vines as soon as they have shed their leaves.

Remove loose bark and fumigate the house with hydrocyanic acid gas. Paint the canes with wood alcohol.

Look out for mealy bug, and if seen apply vigorous remedies at once.

Mint, Taragon, Chives, and other herbs may be potted up for use during the winter.

Taking Care of the Fruits

Apples and Pears are best set in the fall, while the stone fruits do better if left until spring. However prepare the soil now.

Prune Grapes and fruit trees any time this month, and if the wood of

the vines is wanted for cuttings, or the scions of fruit trees for grafting, tie into bundles and bury in the ground until spring.

Mulching for the Strawberries may be put on toward the end of the month in cold localities, though the generally accepted practice is not to apply it until the severe weather of December sets in.

Fruit trees affected with scale to be sprayed during mild weather with a "dormant" spray.

For the Land's Sake

Heavy, retentive soils are benefited by trenching or double digging now, leaving the surface as rough as possible.

Clay sods which are hard and inert may be covered with furnace ashes during winter to be dug in later.

Land that has been heavily manured for several years will be benefited by a liberal application of lime now.

The orchard is to be a permanent feature of the place so prepare the ground well. Plow deep, and subsoil to break up the hard pan usually found beneath the surface soil. Make the holes where the trees are to go much larger than necessary, and fill them up with good soil and incorporate plenty of well-rotted barn-yard manure.

Work in the Greenhouses

Early planted Freesias to be staked; feed when buds appear.

Callas may have liquid manure as they show flower buds; apply freely as the plants grow.

Sweet-peas dislike heat. Around 45° is about right during the night, with a corresponding rise with sun heat during the day. Watering is important at this time. Avoid anything like stagnation, or waterlogged soil, yet on the other hand don't have it too dry.

Lilies intended for Christmas, to go into a warm house; do not feed until the buds show. Syringe overhead on bright days. Spray for aphis. Throw away diseased plants; they are not worth bothering with.

Pansies to be planted in benches for flowering in February and March.

Lilium giganteum and formosum to be bought and potted up for Easter flowering.

Discontinue removing flowering buds from winter-flowering Begonias.

Camellias and Azaleas to be kept as near 40 degrees as possible.

Early planted Hyacinths, and Paperwhite Narcissus to be placed in a cool house and gently started.

Wall-flowers sown in May and transplanted, to be lifted, potted into 5-in. pots, and placed in a coolhouse until February when they may be gently forced in a moderate temperature.

Pot-grown Rambler Roses intended for spring forcing are best kept in a coldframe until wanted. Tie up the canes, and lay the pots close together.

Hardy Delphinium lifted and boxed up now may be had in flower by gentle forcing several weeks ahead of these out of doors. Carry the clumps along in a coldframe.

Dielytras may be similarly treated; also Iris.

Clumps of Spireas to be thoroughly soaked in water and potted up as soon as they arrive. They are gross feeders and need rich compost.

Cinerarias for Christmas should now be in 5-in. pots. Those that have filled the pots with roots may be fed liquid manure water once a week. Give the plants a light sunny position on the bench, and plenty of room to develop the foliage.

Begonias Gloire de Lorraine and Cincinnati may be propagated from leaf cuttings.

Small-flowering Gladiolus of the Colvillei type to be planted in flats or bulb pans, and placed in coldframes, or coolhouse and brought into heat the latter part of February.

Chrysanthemums to be kept cool and dry, cuttings of bush plants to be rooted.

Geraniums, where flowers are wanted for Christmas, to be fed freely with fertilizer; and quit removing flowering stems.

Campanulas for forcing to be lifted from open ground, potted, and put in deep frame until January.

Allamandas and Bougainvilleas that have been growing on during the summer to be rested now.

Roman Hyacinths and Paperwhite Narcissus that have made plenty of roots can be placed in a temperature of 50 degrees, and batches brought in every ten days to maintain a succession.

Cinerarias and Schizanthus to be potted on as they require. Grow them cool (45 degrees at night.)

Poinsettias need even temperature, maintaining 60 degrees at night steadily. Feed with weak liquid manure twice a week as soon as the bracts show color.

Carnations require an even night temperature of 50 degrees. Discontinue pinching. Early cuttings may be taken.

Roses that have been flowering for some time may be given moderate quantities of liquid manure, or topdressed with a mixture of half soil and half cow manure.

Palms and stove plants need a moderate resting period; keep the house a few degrees lower at night (about 60 degrees).

Large flowering English Primroses to be planted out in a house with a violet-house temperature or wintered in pots in the frames, for bringing in some time in February for Easter flower.

Hydrangeas in Tubs or Planted Out

Tender Hydrangeas may be buried with soil to protect them, or empty barrels minus the bottom and top may be placed over them and filled with leaves.

Plants in tubs that have been gradually dried off, to be put into frost-proof pit or cellar. Do not prune, as it will destroy the bloom.

The Cleaning-up and New Start for the Flower Garden

Fall sown Sweet-peas flower much earlier than spring sown. In the vicinity of New York and the colder sections of the North Atlantic states protection (i. e. a mulch) is essential. Sow before snow comes.

Plant all spring flowering bulbs as soon as possible—there's nothing to be won by delay.

Dig over vacant beds and leave as rough as possible.

Start giving protection to such things as tender Hydrangeas, Boxwoods, Rhododendrons, and Hemlocks in exposed situations.

Protect slightly Foxgloves, Sweet Williams, Clove Pinks, and Yuccas, etc., which remain more or less green all winter. They must not be covered completely.

Madonna Lilies, Oriental Poppy, Eremurus, Spanish Iris, etc., which grow at the top during mild spells in winter can stand only a loose light covering held in place with a few twigs. A heavy covering for such plants spells disaster.

Cut off and burn all flower stalks.

Gather up the stakes and put them away for another season.

Get the mulching material to some convenient place and apply it after the ground freezes sufficiently.

Perennials may be planted until the ground freezes up.

Lift and store, preferably in a dry, cool cellar, Montbretias, Cannas, Dahlias, Gladiolus, and other tender summer flowering bulbs. Cannas winter well under a greenhouse bench.

Cut everlasting flowers such as Gomphrenas and Straw-flowers before they are badly frozen, and hang up indoors to dry.

For the Californian Garden

November and December. Continue planting spring flowering bulbs. If they are in good condition Tulips may be put in as late as Christmas and yet give good results. Sow in open ground such hardy annuals as Calendula, Larkspur, Scarlet Flax, Poppy, Nasturtium, Sweet-peas, and the many attractive native annuals—all will give spring flowers. Set out Pansies, Stocks, Snapdragons, and Wallflowers. Divide and replant perennials. Fertilize lawn. Toward the end of the year plant dormant deciduous trees and shrubs.

NEXT MONTH'S NUMBER

THE December Garden Magazine, following the successful effort of last year, will be issued as the Pacific Coast Annual. The cover design by a California artist has its motif in an old mission doorway in Monterey Co., California. Similarly, the leading feature articles reflect strongly the interests of that flowery region. Mrs. Oakleigh Thorne, who gardens successfully in both East and West, describes and interprets the differences that encounter the Easterner when he goes to the Golden West. Another article describes a Los Angeles suburban home garden. Of broader appeal is Mr. Mark Daniel's inspirational writing on the Seashore Gardens of the Pacific. A seed sowing table for Annuals will serve the practical interests of the million who would garnish their gardens with the gems of the floral world. Mr. Woodman, of the Horticultural Department at Berkeley, writes on the qualities and respective merits of the different Eucalyptus. Dahlia fanciers will find an up to date review of the progress to triumph of that popular flower in California.

OLD-FASHIONED GARDENS THAT CONTINUE TO CHARM

LOUISE BEEBE WILDER

"Heere be faire Roses, sweete Violets, fragrant Primroses, heere will be Jilly floures, Carnations, sops-in-wine, sweet Johns, and what may either please you for sight, or delight you with savour."

Sir John Lilly

WHEN we speak of an "old-fashioned garden" just what, exactly, do we mean? It is one of those magic phrases that paints a picture in the mind, not one picture, indeed, but many, for the gardens of the past flowered into as many forms as men have been "diversely delighted." Utter the incantatory words and from out the mists may dimly loom a little walled inclosure close within the shadow of a grim monastery, where gentle monks tend a meager assemblage of herbs and roots. Here we find only plants of practical value, medicinal herbs and vegetables, for in those austere days gardening for beauty's sake was not followed—though beauty was there, but with other reasons than itself for being. Among the worthy "leekes" and potent "fenyl" smile gay red and white Roses, spread of Violets, brilliant Poppies, "the great silver Lily," Primroses, Cowslips—each, in those days, a "plant of virtue" prized for meat or medicine; and in the spring against the dark walls fluttered the blossoms of Cherry and Quince, Apple and Pear.

Or perhaps we see a fair Tudor garden set forth with little beds in quaint patterns, "so enknotted it cannot be expressed," and

"With arbours and alleys so pleasant and so dulse
The pestilent airs with flavours to repulse."

This is a more spacious scene; the garden paths are wider and there are gracious terraces, and the parterres are embroidered with numerous "outlandish flours" lately crept in to "intice us to their delight." Here for the first time we see the Iris, not in the bewildering raiment of to-day, but meekly clad, the astonishing Tulipas from Turkey, the gorgeous Crown Imperial and the little Checker-lily, Sweet Sultans, Marigolds, Larkspurs, annual and perennial, Jacinths (Scilla), and Snowdrops, called Bulbous Violets, the Mock Orange and the Laburnum; and lowly Leek and Fennel are banished to a region of their own.

Or is the scene Victorian showing intricate beds charged with Geraniums and Calceolarias in a very glare of insolence? In this garden we vainly seek the Hollyhocks and Rockets, for all "such like old contraptions" are in hiding before the wrath of fashion, and sleek bedding is the order of the day.

FOR most of us, however, probably the old-fashioned garden is none of these, but merely some friendly garden known in childhood—a garden watched over by great trees, pervaded by loved forms, where Johnny-jump-ups played hide-and-seek among the Currant bushes; and inter-mingled Phlox and Tiger Lilies boldly proclaimed each other's inferiority; where summer days were long and luscious fruit hung always within reach. This garden appears to us as the very abode of peace, and always old, restfully mature and settled, never by any chance as newly made and stark in the glare—though the oldest must have experienced this awkward age—and never was it subject to sudden changes of intention with subsequent disfiguring upheavals. Here, verily, God did not send us new flowers every year; we were as sure of the stout Peonies as of the Rock of Gibraltar, the corner where the first Violets were to be found was ever the same, and the white Lilac was a landmark. Of such a garden the poet sang,

"And here on Sabbath mornings
The goodman comes to get
His Sunday nosegay—Moss Rose bud,
White Pink, and Mignonette."

But whatever the picture invoked for us by the magic phrase, it is more dream stuff than reality—shadows lie in its corners and affection gilds its edges—and at the gate stands the Angel of Sentiment, waving us back when we would approach to obtain what the movie people call a "close up."

What were these old gardens like in reality? Is the spell they cast over us, even after many years, woven entirely of sentiment and time's silver cobwebs; or had they, in truth, qualities and characteristics that made them superior to the gardens of to-day? We have come a long road since monastic gardens were the only ones; a long way, even, since yesterday when our mothers exchanged roots of waxen Dahlias over the garden gate, and were satisfied with Hybrid Perpetual Roses and the old purple Flag Iris. It is conceivable that in our haste to grasp all that the unwinding road disclosed, we have dropped a grace or two that we might well turn back and seek.

IN MANY parts of the East, gardens made in the early days of our country still survive, and their charm is distinctly felt, even where neglect and decay have had their way. Many of these old gardens are what is termed formal in design, but how poorly the grandiloquent phrase indicates the simple directness of their arrangement. "The characteristic of the old formal garden," writes Mr. Reginald Bloomfield, "was its exceeding simplicity. The primary purpose of a garden as a place of retirement and seclusion, a place for quiet thought and leisurely enjoyment was kept steadily in view. The grass and the Yew trees were trimmed close to gain their full beauty from the sunlight. Sweet kindly flowers filled the knots and borders. Peacocks and pigeons brightened the terraces and lawns. The paths were straight and ample, the garden-house solidly built and comfortable; everything was reasonable and unaffected."

This is a pleasant picture. One can imagine the peaceful vistas along straight shadowed walks, suggestive of unhurried peregrinations from one point to another, rather than the awkward short cuts and labored windings that obtain in many gardens of to-day. Shade was of prime importance, and comfortable seats in shady places lured to work or repose in the open air. Often rows of white beehives, ranged beneath the Apple or Pear trees, gave a sense of line and intention to the riot of bloom about them, and a quaint dove-cote supplied a very creditable "architectural feature."

Such old gardens we feel were designed with reference to the

daily life of the family, their convenience and enjoyment, rather than with any idea of display; and we know that much of the family life and activity took place, weather permitting, in the garden, thus impressing it with the personality and individuality that only use can bestow. Perhaps it is this "lived in" quality that we miss in modern gardens more than any other; for today, we do not live in our gardens—we work in them, we prowl about them inspectingly, we take our guests the rounds of them, but when it comes to sewing, or reading, meditating or entertaining guests at tea, we retire to the screened piazza, or some indoor fastness, so that the garden acquires the reserved atmosphere of the "best parlour," or the spare bedroom that seldom fulfills its destiny.

Richard Le Gallienne gave forth the discouraging opinion that a garden to be a garden must be old, "for a new garden, quite obviously, is not a garden at all." But more *living* in the new garden, and planning it in the first place with a *view to living in it*, would go a long way toward putting the new garden in a class with the old, so far as atmosphere is concerned, and when it comes to the flowers themselves, there is no doubt that we are immeasurably richer and more intelligent than were the gardeners who have preceded us.

But let no one be of the opinion that early gardens were ill-furnished. In 1629 John Parkinson published his great "Paradisi In Sole," describing "all sorts of pleasant flowers which our English ayre will permitt to be noursed up," with sections devoted to the Kitchen Garden and the Orchard. There are six hundred and twelve pages to the fine volume, and among them one may lose his way along many a fragrant by-path, astonished at the rare and lovely flowers he finds and envious

Mattie Edwards Hewitt, Photo.

A MODERN GARDEN TOUCHED WITH OLD-TIME GRACE

When the spirit of bygone days can be so rehabilitated and continued in the midst of whirring, modern suburban life—for this garden is but a score of miles from the "Big City"—it furnishes heartening assurance that beauty and not fashion guides the genuine gardener. Garden of the Misses Mulford, Hempstead, N. Y.

Frances Benjamin Johnston, Photo.

WHERE GRANDMOTHER'S FAVORITES STILL HOLD PLEASING SWAY

Larkspur (Delphinium) and Canterbury-bells (Campanula Medium) continue to fill our gardens with the color and charm that delighted our forebears and the trellised Rose still gaily climbs

Yes, undoubtedly there were plenty of flowers in the old-fashioned garden, but it is nevertheless true that we live in a world to-day where flowers are not only more numerous and various, but where the best of the old friends have been greatly improved and their sphere of usefulness much extended—here we have distinctly gained, not lost.

A FEW flowers cherished by an older day have disappeared and will perhaps, "no more know the dew of gardens"; others like Bouncing Bet and the pretty blue-belled Rampion, have taken to the open road and rejoice in companions as free-thinking as themselves. The garden regrets them not. Some lovely old friends carelessly regarded by the present age, are worthy of being restored to favor. Notable among these are the old-fashioned Roses—York and Lancaster, the Scotch Briers, the Province Rose, the Damask, Maiden's Blush, and the Persian Yellow, whose place is not filled even by the wonderful race of Hybrid Teas and the great variety of hardy Climbing Roses recently developed.

The little Star-of-Bethlehem is a charming flower of old gardens, now seldom seen, to which we might turn gratefully in the present shortage of bulbous plants. Double Rockets it would be pleasant to find more often, and Fair Maids of France; many fragrant herbs such as garden Valerian, Honesty or White Satin, and others. It is rather sad, too, to find the stiff Japanese Spruge (Pachysandra terminalis) more and more asserting itself in shady places where once spread the fine dark green of the friendly little Periwinkle with its wide blue eyes so ready to gleam for us upon the first mild day in spring. Also I do not like the fat double Lilacs of to-day, and to my eye the Delphinium has a somewhat diminished grace and charm—put on flesh and lost its winsome curves—but on the whole there is little to complain of and much to rejoice in.

The Dahlia's advance from soap-like stolidity to the present exquisitely careless assemblage of petals is a triumph. Remember the terrible commotion of color that used to arise from a mixed packet of Zinnias, and consider the fine color-tones now to be derived from the same source. Think upon the Iris! A whole book must needs be written to describe the wonders that have befallen this simple flower in recent times. And the Phlox, lifted from wayside indigence to its present grand estate!

of the old London gardener's knowledge and skill. In March we find blooming in Parkinson's own garden "the double blew Hepatica and the white and the blush single, many sorts of Crocuses, double yellow Daffodils, Oriental Jacinths, the Crowne Imperiall, divers sorts of early Tulipas, some sorts of French Cowslips, both tawny, murry and blush, the early Fritillaria or checkered Daffodil, and some other sorts of early Daffodils and many sorts of Anemones." "In April," he continues, "commeth on the pride of these strangers," and enumerates forthwith such a list of treasures as will make gardeners who are satisfied with their April crop of a handful of Crocuses and Snowdrops and a few Daffodils, sit up and look to their laurels. Elsewhere in the great book he devotes one hundred and fourteen pages to the description of Tulips, "which are of so many different colours that it is almost impossible to expresse them." Also he describes 25 kinds of Daffodils, 22 Lilies, 31 Iris, 31 Crocuses, 8 Campanulas, 12 Fritillarias, 12 Clematis, 21 Primroses and a like profusion of Roses, Gillyflowers, and innumerable others.

Who now sighs for the Sweet William of other days when such splendid varieties as Newport Pink and Scarlet Beauty are grown? Nor has it lost, in its new guise, its "homely cottage smell," for which it has always been beloved. Consider the added ruffles of the Petunias; and the good clear colors, the exquisite tints to be found in the new Verbenas; the enchantments of the recent Gladiolus; the augmented beauty of Sweet-peas, Calendulas, Poppies, Stocks, Columbines, Michaelmas Daisies, Peonies, who must all be saying with the old lady in the nursery rhyme, "Can this be I"?

Consider, too, the great treasure that has come to us from foreign lands, to say nothing of that which lies within our own country which we are only lately coming to appreciate and to make use of. Undoubtedly it is a fine thing to be making gardens in this great twentieth century with its manifold advantages, but it is well to bear in mind that its greatest advantage lies in all that has gone before. Let us look attentively at the old gardens and try to endow our splendid new ones with the charm of their settled repose, their unaffected simplicity, their inviting livableness.

FOLLOWING THE CHRYSANTHEMUM TO THE LAND OF ITS INHERITANCE

KIYOSHI SAKAMOTO

What the Chrysanthemum Means to the Japanese—Its Ancient Tradition and Present-day Cultivation

EDITOR'S NOTE: *The Chrysanthemum is such an established feature of our American gardens and plays so important a part in prolonging the all too swiftly passing pageant of autumn that Mr. Sakamoto's account of its significance in the life of his people, its place, and the detailed technique of its culture in Japanese gardens of to-day holds special interest for us.*

THE chrysanthemum, the emblem of our Imperial Family, is, in the estimation of us Japanese the king of flowers. History tells us that it was in all probability imported from China in the reign of the Emperor Nintoku (313 A. D.), gradually establishing a new home in Japan.

One of the annual functions of the Imperial Court of Japan is a "Chrysanthemum party" which is held on the ninth day of the ninth month (September in the lunar calendar) and is honored by the presence of the Emperor himself, high officials of the court, and other dignitaries of state. They all participate in the celebration, which takes the form of feasting and composing of poems to the flower. In the past a feature of the function was the chrysanthemum *sake* served on this special occasion instead of an ordinary kind. This unusual beverage was made from a mixture of rice, sorghum, and chrysanthemum stalks and flowers, of which the latter were always gathered on the ninth day of the ninth month. It took just one year for this mixture to effervesce, it is said. The Chrysanthemum party is still given every autumn as of old, but, regrettable to say, the use of this curious drink has somehow or other disappeared from the menu of the festival.

AS THE JAPANESE GROW THEM INDOORS

Here we have a very orderly array of potted plants with an ingenious device for concealing the ugly bases. Allowed plenty of space, each specimen has attained a sturdy growth topped with healthy bloom

The festival originated in imitation of a Chinese custom which was founded on an ancient legend, but later underwent changes and became a social gathering with the composition of poems by contestants as its chief attraction. The ancient legend runs as follows:

IN THE time of the Han dynasty in olden China, Chang-fang once warned Kwang-ching that a serious calamity would befall him on the ninth day of the ninth month unless he drank chrysanthemum *sake* on a high mountain, and that he must carry a silk bag full of gumi (fruit of Elæagnus pungens) on his arm as he ascended. Kwang-ching followed the directions of the warning to the letter. As the prophet predicted, the cattle and poultry of Kwang-ching suddenly died on the very day; a mishap Chang-fang explained by saying that the domestic animals and fowls died in their master's stead. Thus in

WITH ALL THE SOFT AIRINESS
OF UNCURLED OSTRICH PLUMES

This type of Chrysanthemum seems eminently Japanesque in quality

China sprang up the custom of drinking chrysanthemum sake on a high mountain on the fatal date in September.

SO MUCH for legend and custom. Now let me give an exact description of our method of raising the flower—a method handed down to us from generation to generation.

Just as there are different types of Chrysanthemums, so there are different ways of cultivating them; but here I will describe how to rear the "kiku" which is the typical Chrysanthemum of Japan.

As the Chrysanthemum is averse to being planted on the old soil, you must either change it or plough it under, first practising "solar disinfection" and then adding straw ashes to the ploughed soil, if you want to sow seed on the same flowerbed as last year.

According to the nature of the soil, the following process must not be omitted so that the flowerbed may be fitted for Chrysanthemum culture.

Sandy soil is easily heated and cooled owing to lack of organic substance. To adapt this for horticultural purposes you must add 30 per cent. of good soil, 10 per cent. of clay or peat, and 10 per cent. of manure. If you want to prepare this mixture a year ahead, add besides 30 per cent. of night soil. When the next year comes, you have only to sift the mixture after turning it up with some straw ashes. This latter process makes a really good soil.

Clay is so strongly cohesive that the admixture is essential to render it suitably loose for cultivation. Ordinary soil is the most productive, if 10 per cent. of sand soil, loam, and manure be added to it to make it sufficiently loose. This kind of soil needs no human manure, but straw ashes may be used.

Ordinary loam with rotten organic rubbish in it is too loose, so 10 per cent. of clay, 20 per cent of good soil, 10 per cent. of sand soil from a river bed, 10 per cent. of manure, 30 per cent of night soil are added—all this should be done just a year before.

Peat needs heating, first of all. Add to this 20 per cent of good soil, 10 per cent. of sand soil, 10 per cent. of old manure, and much new night soil. Leave this mixture alone in a heap for a year; next spring it can be used after adding some straw ashes.

THE big kiku is adapted to a somewhat moist soil, while the small kiku grows well on clayish soil.

For pot cultivation more manure is used. In detail: 10 per cent. of sand soil is added to the above mentioned artificial soil in addition to a mixture, 30 per cent. of rake cake, 30 per cent. of rice chaff, 30 per cent. of superphosphate of lime.

This compost is kept untouched in a straw bale about 2 ft. deep underground. After sufficient putrefaction, it is taken out of the ground and passed through a fine sieve. Keeping the straw bale wet hastens the process, so that it is ready for use in two weeks.

The flowerbed must be located in a sunny and elevated place in the garden. The area of the bed may be large or small according to circumstances, but the most common size is 18x9 ft. Young sprouts of Chrysanthemums must be obtained. Often these can be had from friends who are expert cultivators of the flower; but they sometimes begrudge you their best specimens, however kindly they may be in other respects. But good young plants are to be had at the seed shop either as cuttings or grafts. If one's taste is for the big kiku, it is better to get the plants in the former way.

The big kiku must be transplanted when still young and is done generally from the middle of May through the first ten days of June. When young green grass begins to clothe the banks of rivers, the time has come for Chrysanthemums to be started. This preliminary work must be done in a "trial ground," and is of utmost necessity, although some would-be experts omit this process as troublesome, only to be rewarded for their negligence by poor flowers. Whether you are a believer in "safety first" or not, you had better be cautious enough to put out your young cutting Chrysanthemum plants in a "trial" or nursery ground.

The nursery must be in a cool place where no afternoon sun-

UNIQUE BUT HARDLY FAIR TO THE CHRYSANTHEMUM

These dramatically posed full-sized figures are clad in living flowers, an odd and—from our point of view—an ineffectual method of display

shine can penetrate; but stagnant dampness will do much harm. The bed is 3 ft. in width and as long as you please. Plough to the depth of a few inches. Especially see to good irrigation. If you think the ground a little too watery, strew sand about 4 or 5 inches deep, for this will keep the bed from dampness. Cover this sandy layer with good soil, (the compound of 70 per cent. of ordinary soil, 25 per cent. of small sand, and 5 per cent. of straw ashes) by sifting through a close mesh until the sifted matter is a few inches high. This soil must not be fed with manure. The soil on which Potatoes and Beans were reared last year will serve most suitably.

Take advantage of a spell of fine weather for setting out your Chrysanthemum sprouts. The day must be windless, and the afternoon is preferable. Take a trowel and a pair of sharp scissors. With the trowel lift the roots of the sprouts about the old plant and ascertain whether the sprouts are coming from the trunks. Part them from the trunks with your scissors and immediately set in the prepared bed. The newly planted Chrysanthemums stand about one inch deep in the ground with a three-inch space one from another. The roots are to be pressed lightly with six of your fingers, three of each hand.

Similarly the second or "real" transplantation is handled. The last, but not least thing to do is making up a tent of straw mats for the protection of the plants. Three sides are covered; the roof and the eastern side are protected with two sheets of reed blinds. The height of the tent is 2 or $2\frac{1}{2}$ ft.

For two or three days after this, water is out of the question. A part of the roof should be open at night, but not in the daytime. Fine weather still continuing, water the bed with a watering-pot at dusk for the first time. If it rains, the tent must be made waterproof. From this time onward give water till the rains come. At the end of a week take away one sheet of reed-blind. One week later all protection is removed. At the end of three or four weeks the sprouts are ready for the second or "real" transplanting. If the sprouts are withered from long travel or heat, keep them in a well about one foot from the surface of the water or leave them in a cool storage room to recover.

The young Chrysanthemums are liable to fall victim to insects, for which a strict watch must be kept, and if any plant be found with withered leaves, root it out.

OF RARE DECORATIVE QUALITY

The Japanese have been quick to see the artistic possibilities of this variety and have frequently used it as a basis for design. (See Japanese screen, page 137)

ANOTHER PLEASING VARIETY

Note the crisply upturned petals in striking contrast to the falling, plume-like habit pictured on opposite page; in such surprising variation does the Chrysanthemum delight

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THE Chrysanthemum as grown in American gardens is also of two types; the large, tender, greenhouse varieties being the big kiku of Japan and the hardy, smaller flowered Pompons, the little kiku. These two groups are derived directly from two distinct species which have become closely intermingled in cultivation, and the resulting progeny is inclined to hardiness or tenderness according to the respective influence of the parents. The large-flowered, hardy forms of more recent introduction are in fact intermediate, and in cultivation are not quite so hardy as the old-fashioned "button" of the little kiku. The reader will be able to draw cultural deductions from the preceding material; and practice has clearly demonstrated that the Chrysanthemum likes a rich soil and plenty of water.

THE FLOWER OF NOVEMBER

JANE LESLIE KIFT

THE myths, symbolisms and legends that have come down through the ages are always fascinating, for we all have some romance in our natures. When these stories in the remotest way touch our own lives, they take on a deeper meaning. There is so much that is old and quaint; so much of the land of long ago woven into the imagery surrounding them.

And so it is with the legends regarding the flowers which are commonly attributed to certain months. There does not seem to be much definite information regarding the origin of this delightful, fancy, but, as far back as it is possible to trace, the Chrysanthemum has been the accepted birth flower for those of us fortunate enough to be born in November with its crisp days and Scotch-plaid foliage. Much of the romance of this gorgeous blossom is very old. One legend, perhaps the most fascinating of all, goes back to 256 B. C.

In the days when brave Romeos won fair maids in ways that were other than modern, flowers spoke a language all their own, naturally sweet to ear and heart as well. In those golden days of plumed gallants and lovely maidens, a white Chrysanthemum represented truthfulness, a red one meant "I love you," and a yellow one beseechingly asked, "Lovest thou me a little?"

"It was a white chrysanthemum
I came to take away;
But, which are colored, which are white,
I'm half afraid to say,
So thick the frost to-day!"

So writes Mitsume, a Japanese versifier of the tenth century. The flower playing so significant a part in the life of the people of Japan naturally had its place in the written expression of their thought and so we keep stumbling upon repeated mention of it—says Rametsu:

"Yellow chrysanthemum, white chrysanthemum:
Why, the other names for me
Are of no use."

Should you have lived in those mediæval days and your Prince Charming had, like young Lochinvar, come out of the West and tossed over your balcony a red blossom and a white one, would it not have thrilled?

In the early part of the fourteenth century the Chrysanthemum became the national flower of Japan. Just before its ascent to popular favor, history tells of a "War of the Chrysanthemum" suggestive of the "War of the Roses" in England; and as this was long, long ago, when weapons were still primitive, it lasted fifty-six years.

One particularly delightful old Chinese legend tells the tale of a king occupying the throne of China in the distant days when monarchs were all saints or deep-dyed villains. This particular king was cruel and naturally afraid to die. He learned, we are not told how, that in an island many miles east of his kingdom grew a rare plant with an unusually lovely flower. This plant was known to yield the "elixir of life." But, alas and alack! only the pure in heart could touch it without causing it to lose its virtue. He was debarred from attempting the journey. The same reason prevented his court from any attempt to obtain this precious liquid.

So he called his wise men and they spent many years trying to overcome the difficulty. One old sage, like King Solomon wiser than all the rest, finally solved the problem. The king, acting on his suggestion, sent three hundred boys and maids on a journey in quest of the island on the shores of which the charmed blossom grew. These youths and maidens, being pure in heart, were qualified to secure the precious juices.

After the usual procession with garlands of Cherry blossoms and paper dragons the voyagers embarked; the wise man, as a physician on whom the god of health had bestowed special favors, having been appointed leader. We do not know whether they found the Chrysanthemum, the flower which would mean perpetual life for the king and court, but we do know they never returned.

On landing, the wise man devoted his energies to setting up a kingdom with himself as king. For many centuries all continued well on the beautiful little island, now known as Japan.

Another delightful story refers to the lasting qualities of the Chrysanthemum blossom, which to the Oriental mind is symbolic of longevity. All along the banks of the River Kai grow the Chrysanthemums: when they fade, the river, being narrow, is covered with their petals. The natives at this time flock to the banks and drink of the waters, believing that by so doing they prolong their lives. This same idea suggests placing a petal in a glass of wine when you wish a guest long life and happiness—a charming bit of symbolism. Coming as this flower does near the end of the year, it suggests human perfection to the Japanese as they watch its petals unfold.

Kiku is the name by which this popular blossom is known in Japan. Say it over a few times; catch the music of the name. Doesn't it suggest a rare old print or a lovely bit of porcelain?

In Dango-Zaka, the florists' quarter of Tokio, they have their Annual Chrysanthemum Shows, which might almost be spoken of as ceremonies, for they are the result of genuine love and worship. There is no suggestion of anything commercial entering into the spirit of the occasion and the one penny entrance fee charged means no profit. From an artistic point of view the Show is a disappointment, because it is rather artificial and utterly lacking the charm of the Japanese garden, where the flowers are permitted to follow their own sweet way. At the Show huge grotesque statues, quite deficient in the exquisite detail of most Oriental art, are bedecked with clothes made entirely of blossoms. (As seen in the photograph on page 134.)

These Shows are interesting, however, when we consider the reverence that enters into their preparation—the simple, childlike affection bestowed on each flower that is handled. Viewing them from this angle we catch their charm and somehow their lack of grace fades into obscurity; we feel the fascination and forget the strangeness of this characteristic ceremony of the Flowery Kingdom.

E. J. Wallis, Photo.

WHERE ART AND REALITY MERGE

The fundamental truthfulness of Japanese design is here strikingly exemplified; the beauty of the living flowers being so convincingly echoed that the spectator scarcely distinguishes between subject and portrait

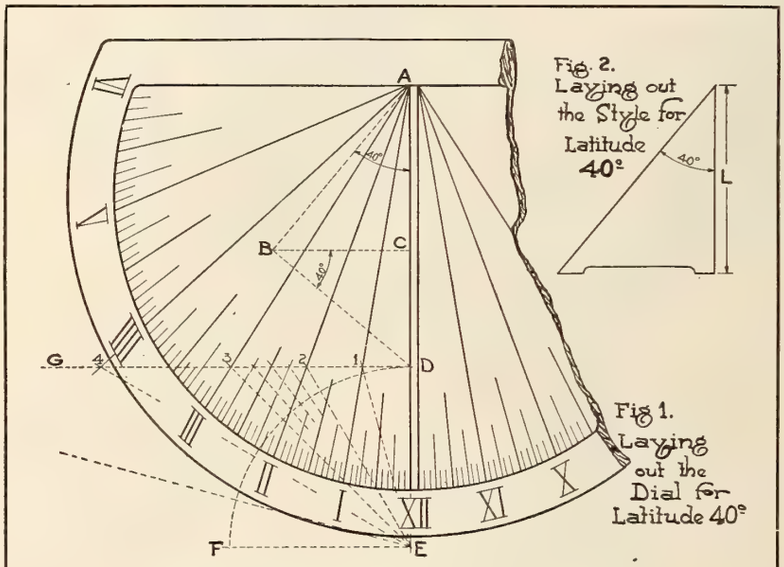
COUNTING THE SUNNY HOURS

G. B. ARTHUR

The Sun-dial of Olden Days Still Serving in Twentieth-Century Gardens—How to Lay Out the Dial According to Latitude

IN "YE goode olde days" back in 1600 every garden had its sun-dial. But right soon thereafter a Hollander made a thing with weights and cogs which he called a clock, and which, though passing strange, would tell the time without the sun. And then, forsooth, such was the fickleness of the people that every household needs must have a clock; wherefore sun-dials went out of style notwithstanding their faithful service since well before 1100 B. C.

The "dial of Ahaz" of Second Kings, XX, 11, and Isaiah XXXVIII, 8, probably belonged to the eighth century B. C. Two centuries later the Babylonians passed the sun-dial on to the Greeks while the Romans captured their first one from the Samnites in 290 B. C. They brought another from Sicily in 263 B. C., but this one, made for a southerly latitude, was not accurate for Rome, though they did not discover that for well nigh a hundred years. Vitruvius, the celebrated Roman engineer, wrote in the first century B. C. of thirteen forms in use in his day. Charles II of England set up in the royal garden at Whitehall a monumental piece in which there were nearly three hundred sun-dials, of seventy-five varieties. As recently as 1907 the Right Honorable Sir William Mather, of Manchester, England, presented to Princeton University an exact copy of the famous Turnbull sun-dial at Corpus Christi College, Oxford.



A SUNDIAL MUST BE SET FOR ITS LATITUDE

Latitude 40°, for which this diagram is worked, covers a line drawn through Philadelphia, Columbus, the Nebraska-Kansas state line; is a little north of Dayton, Springfield, St. Joseph, Denver, Reno; and reaches the coast on the north line of Mendocino County, California

How to adjust the dial for any given longitude is explained in the article

Sun-dials will never really go out of fashion. They have too many rich associations; historic, artistic, and sentimental. A sun-dial is an essential part of every garden. It adds a graceful touch of old-world history, a flavor of antiquity. It is a monument of far more grace and utility for public places than many of our portrait statues, and it has a literature all its own.

Somehow with all our clocks and jewelled watches we have the notion that sun-dials are merely ornaments—crude time-keeping devices that sufficed for the dark ages, or relics of barbarism perhaps. But that is far wrong. The sun-dial requires neither winding nor setting; it never balks at inattention; it has no lapses of dependability.

It is always right. That is, it is always in agreement with the true time by the sun. It disagrees with "standard" time, of course, because that is a paltry artificial thing, a mere approximation. For that matter sun-dial time can be reduced to standard time with the aid of a table of equivalents. Still, anybody can have standard time, and it is something to have the true time by the sun on the meridian of one's own garden.

Far from being a common thing to be purchased carelessly, the sun-dial possesses an individuality which is at once peculiar and distinctive, for it must be made for one location, and it will fit that one alone. The governing requirement is the latitude. An accurate sun-dial can be purchased, provided it is purchased for a specified latitude; but lacking that all-important coincidence with its position on the globe, it is worthless.

FORTUNATELY gnomonics, which is the art of constructing sun-dials, flourishes to-day just as it has flourished in any other age, for sun-dials have been made in so many forms, and in so many combinations of beauty and utility, that they are ever in demand. For the benefit of the gardener who wishes to time his dial accurately the method of laying one out is here given.

In Figure 1 there is a portion of a dial—which is the horizontal plate with the numerals around the base line. In the beginning, while the dial may seem to be a semicircle, it is really two quadrants separated on the line A-XII by the thickness of the style (the upstanding piece which casts the shadow.) The sun-dial will not be accurate if this thickness is ignored.

For the left hand quadrant begin at A, and draw a line A-B at an angle with A-XII corresponding to the degree of latitude. At any convenient point erect a line B-C perpendicular to A-XII. From B draw a line B-D at right angles to the line A-B. The angle DBC will be the same as BAC, or the same as the degree of latitude.

Now set the compasses for the radius D-B, and describe the quadrant D-F touching the end of the line D-B. Draw the line D-G perpendicular to the centre line A-XII.

Divide the quadrant D-F into six equal parts, and draw radial lines from the centre of the quadrant E to cut the line D-G; marking these intersections 1, 2, 3, 4, etc. Draw other radial lines from the centre A through these intersections to the base line of the sun-dial, locating the hour divisions I, II, III, IIII, V.

Between 2 and 3 the half-hourly and quarter-hourly divisions are laid out by the same method.

The style can have many variations of form so long as the top angle (shown in Figure 2) is the same as the degree of latitude, agreeing with the angle BAC used in laying out the dial. The sloping side must be straight and true, but the other two sides may be made to suit any design. The length L is the distance from A to the inner circle of the dial at XII, and the style is mounted with the high end at twelve.

Though the most common form to-day is semicircular, many

of the older sun-dials were square. With so much choice the shape may be made to suit one's individual taste, laying out the divisions as already explained and extending the radial hour-lines to touch the base line.

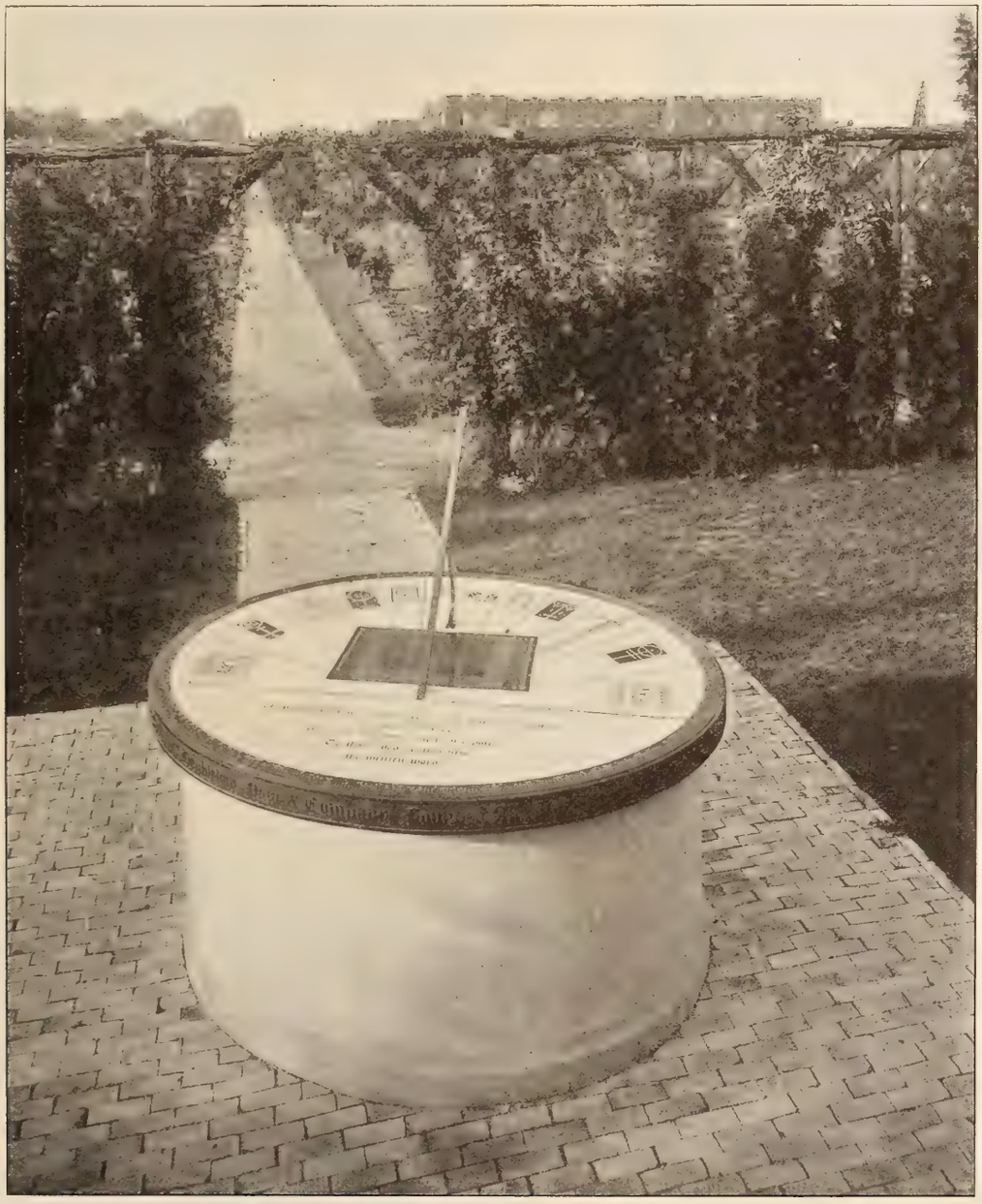
The sun-dial should be mounted in a horizontal position, precisely north and south along the line A-XII, with twelve o'clock at the north. It is best to have a surveyor come and stake out the line across the space where the sun-dial is to be, and then whenever needed in construction a string can be stretched between the stakes to give the direction.

ONE of the most popular treatments is to mount a small bronze sun-dial upon a pedestal, and very charming effects can be had with this arrangement in the proper setting. The pedestal may be a rough block of stone or an ornate column of cut stone or concrete. It may stand on a close-clipped lawn, effective in its simplicity, or it may rise out of a planting of low shrubs. Endless are the variations.

A skilful gardener can make a sun-dial of more than passing notice with low-growing border plants on a level place on the lawn, using a white-painted post to support the end of the sloping gnomon, which corresponds to the top edge of the style. At Dodge City, Kansas, where standard time changes from central to mountain time, there were one summer, two sun-dials on the lawn at the station, one for each time, made with very low plants for all the lines and numerals.

Every sun-dial needs must have its motto. Mrs. Gatty's "Book of Sun-dials" with sixteen hundred or more mottos collected from far and near affords a wide choice. Sombre most of them affect to be, significant of the inexorable march of time, remindful of the Reaper with his rusty scythe; but in some a happier theme breaks through the apprehensive gloom, and some undaunted spirit boasts of counting "only the sunny hours."

Old things we have in plenty, but few to vie in interest with the sun-dial come out of shadowy antiquity to grace our gardens and guide us through the sunshine of all too swiftly flying hours.



THE DIAL TELLING OFF SUNNY HOURS IN THE HOME GARDEN OF "THE GARDEN MAGAZINE"

Built to withstand the insidious encroachments of time and the inclement attacks of frost and heat this simple, massive dial is impressively set amid Cedars and arbored Roses. The old printers' marks and a facsimile in bronze from the Gutenberg Bible, the first book ever printed, are not only historically significant but make a beautifully patterned surface as well

TO PLEASE THE GARDENER

Novel Designs in Dials

This intent little figure, whimsically dubbed "Pinehurst," has instant appeal for the golfer and is certainly an up-to-date interpretation of the sun-dial. Lucy Richards, sculptor

An especially fitting and sprightly motif for garden ornament, the bird is naturally found on dials. Here we have him catching the early worm with a vengeance and incidentally telling the time—an amusing conception in bronze by E. Angela. On the lower right he figures in a nicely balanced bit of conventionalized design

About four and a half feet in height, this bronze dial by Enid Yandell is a restrained and finely executed ornament to suit the classic garden; or any other where simplicity reigns

Some gardeners are also fishermen, and Harriet W. Frishmuth has a way of touching bronze with life that makes such a piece of work irresistible to the angler who loves a garden

AT CHRISTMAS TIME

and Other Things

A mirror in the sun-room has distinct advantages and what could more happily suggest garden gaiety than such a basketful of posies rendered in pastel tones that fits into almost any color scheme

A variety of vases is part of the essential household equipment of the flower grower, and Danish faience comes in many shapes patterned with brilliant, lovely color

Even the smallest garden has a fruit tree or two and the right comport filled with peaches, grapes, or rosy apples is doubly alluring. Italian pottery is good in style and excellently subdued in tone

Bronze book-ends, indubitably fashioned for the gardener of either sex—the woman with the spade, the man with his scythe, both taking a few moments off, it appears

A staunch little sentinel for veranda or solarium where, alack, hours must needs be counted! Though only a wooden cock, he looks a lively one sure to be "on the job"; the Horns of Plenty upon which the circle rests have happy suggestion for the gardener, too

A SIXTEENTH CENTURY HERB GARDEN

H. H. MANCHESTER

THE olden-time herb garden here pictured is reproduced from a hand-colored woodcut in the "Kräuterbuch," or "Herb Book," published at Frankfort by Lonicerus, or Adam Lonitzer, in 1582.

The scene is remarkable for several reasons, most important of which is that it shows the comparatively new process of distilling being carried on in the herb garden, for the sake, let us hasten to say, of medicinal purposes.

The operation is shown in the foreground at the right of the picture. An apprentice is picking over the herbs, which are then being pounded in the mortar by the apothecary who is seated in the center of the picture. At their right may be seen the furnace and various alembics for distilling. The group of men at the left probably represents famous doctors of ancient and mediaeval times. At the extreme left, a woman herb gatherer may be seen with a basket on her head. In the background, a gardener is grafting a tree, while a fountain and vines add to the beauty of the scene. In the right-hand upper corner is pictured a sick room, in order to suggest the use made of the products of the garden.

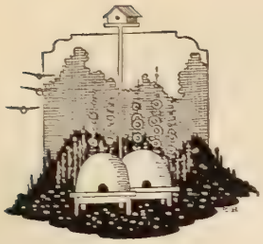
While the distilling of some easily vaporized substances was known to the Greeks, the distilling of alcohol and essences was developed by the Arabians. As late as 1500 Hieronymus Brunschwig, or Henry of Brunswick, published a book in which he described "the new art of distilling simples."

This process was carried on particularly by the apothecaries. Pharmacy and medicine had become separated during the Middle Ages, and the pharmacists attended to the preparation of the remedies. Since many of the herbs used could not be found readily enough in a wild state, each good apothecary was supposed to raise them in an herb garden of his own. This, of course, was only an extension of the practice of raising simples, carried on previously not only by the physicians, but by the Benedictine monks and others.

But the work of Lonicerus was much more than simply a description of medicinal herbs. It pictured, described, and gave the medicinal properties of practically all the trees, shrubs and plants considered of importance at the time. An importation from America, Tobacco, is described, and in explanation a picture is added showing an Indian smoking a large roll of Tobacco longer than his head.

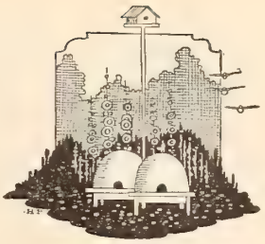
The work contains the English name in addition to the Latin and German for each species. This makes it possible to give a very interesting list of the better-known shrubs and plants cultivated at the time either for their beauty or medicinal properties. These are given in the order followed in the book, with the old English spelling preserved:

Buck-thorn, Haw-thorn, Sweet bryer, Rose, Berberre, Elder, Ash-tree, Jujubes, Arbute-tree, Sumach, Sycomore, Acacea, Cedar, Myrtle-tree, Cotton Plant, Cubebs, Sarsa Parilla, Balsam tree, Tree Moss, Misseltoe, Asphodee, Burdock, Saffron, Artichoke, Foxglove, Mandrake, Orlander or Rose-bay, Coriander, Poppy, Anemone or Emony, Columbine, Centory, Chrysanthemum or Gold knap, Ox-eye, Marigold, Trefoil, Hore hound, Catmint, Spear mint, Water cresses, Penny-royal, Marjoram, Organy, Thymus or Time, Hysop, Sage, Rosmary, Lavender, Spicknard, St. John's Wort, Daisy, Gentian, Cowslip, Worm wood, Tansie, Marigold, Snap-dragon, Holy hoks, Marsh mallows, Horse radish, Crowfoot, Laurel, Water lilly, Violets, Hearts ease, Larks-spur, Lilly of the Valley, Carnations, Peony, Winter green, Jacinth or Hyacinthus, Daffodils, Hops, Bittersweet, Wood-bine or Honey Suckcles, Saxifrage, Fern, Colts foot, Hemlock, Yarrow, Madder, Pease, Lilly, Flower-de Luce, Flag, Saffron, Golden Rod, Tulip, Tobacco, Sun flower



THE GENTLE ART OF SIMPLING

SHEBA CHILDS HARGREAVES



"Good huswives provide, ere an sickness do come,
Of sundrie good things in house to have some,
* * * * * * *
Good herbes in the garden for agues that burn."

Thomas Tusser

THE gathering and compounding of herbs for medicinal and culinary purposes is well nigh a lost art with modern peoples, though of late years there has been a revival of interest, particularly in the herbs used in cookery.

It is to the judicious use of fine herbs that the French cookery owes its excellence. The French chef uses perhaps twenty herbs, where the American has a speaking acquaintance with two—parsley and sage—and this last, when used, is so liberally applied as completely to dominate the dish which it should merely have flavored.

Occasionally, herb salads are encountered among the foreign population of our cities, the people bringing with them seeds of their native herbs and from such herbs may be secured some which are to be found in no other way.

OUR pioneer grandmothers were skilled in the use of medicinal herbs, and in every well regulated attic great bunches of them were stored head down. The simple but powerful infusions of boneset, horehound, hops, sage, and catnip were used for the minor ailments of grown-ups as well as children, and were relied upon in an age when doctors were not so numerous as they are to-day. The rise of patent medicines has largely obliterated the old-fashioned simples, but medicinal herbs are, nevertheless, well worth consideration as part of the household equipment. If they were effectual a generation ago they are to-day.

It might be well, instead of smiling at Grandmother when she speaks of these old-fashioned simples regarded so potent in her young days, to learn from her as much of the art of simpling as she can remember and to grow some herbs in the home garden.

There are reliable books on herbs which are worth study, some of them are most breathlessly interesting, going back as they do to ancient times when herbs were used in compounding love potions as well as in dealing with various and terrible forms of witchcraft. From them one may gain, in minute detail, knowledge of the various superstitions which the race has outgrown as well as much information still helpful at the present day. Aside from its utilitarian value, the study of herbs throws interesting side-lights on the history of the nations where they are grown; while the collecting of ancient herbs is a delightful hobby for the person who loves growing things for their own sakes as well as for their association with the past.

HERBS fall loosely into three classes: for flavoring, for use as potherbs, and for medicinal and toilet purposes. The line of demarcation could not be very closely drawn, for many flavoring herbs have distinct medicinal properties. As to habits of growth they are again divided into perennials, biennials and annuals.

The pot and flavoring herbs would, of course, belong to the kitchen garden proper, but many of them are so sweet as to be accorded a place among the flowers. A little plot may be set apart for the growing of herbs exclusively, though the fragrant, woody perennials are excellent for massing and as a background for certain flowers. Tennyson was particularly fond of Madonna Lilies set with gray-green Lavender. Rosemary and these same Lilies would delight the soul of the poet or artist.

The modern flower garden is rather lacking in fragrance, for with the marvelous improvement of many of our flowers, size and color have been gained at the expense of perfume. The herbs furnish evanescent whiffs of pungency, which delight the senses of the lover of growing things; as when, in wandering about among the flowers, the clothing brushes against Southernwood evoking a refreshing, spicy odor. And a leaf of Rosemary or a sprig of Lavender bloom, absent-mindedly crushed in the hand, adds wonderfully to the charm of a stroll through the garden. Aromatic plants have another point in their favor; they do not give off their odor unless invited to do so by bruising or crushing the leaves.

Lavender cannot be too abundantly grown. It may be used to fill in dry, stony places where it is difficult to make other plants flourish. The flower stalks, gathered just before the flowers open fully so that there is no scattering, are delightful for scenting linen. If enclosed in muslin bags, bunches may be laid among woolen clothing to keep away moth as well as to impart their fragrance. In England, it is grown in what is known as drying yards, the hoary bushes being used for spreading out the wet household linen, hence the lavender-scented sheets so often mentioned in English novels.

Lavender belongs in the perennial class of woody herbs, along with Sage, Southernwood, and Rosemary, all easily propagated by cuttings taken from the old wood, or by root division. While a good start may be made from seed, the method is, of course, much slower. All aromatic herbs require strong sunlight to bring out the scent, and should not be planted near buildings nor in spots where there is no direct sunlight and free circulation of air. A rather poor, dry soil is best so that the tendency is to small leaves and flowers, which contain more of the aromatic oil than rank, succulent growths.

Many of the tender herbs are either annuals or biennials, but if given the right environment they will seed themselves and thus become practically perennial in their nature, though a few of the more tender ones will have to be started each year indoors and set out in the late spring when the earth is warm. Sweet Basil and Marjoram—spicy annuals—are well worth the extra trouble to grow. Summer Savory is also tender, but the Winter Savory is perennial, though the flavor is inferior.

Another class of aromatic herbs are grown for their seeds—of these the most common are Dill, Anise, Caraway, and Coriander. As they bloom about the same time, Coriander and Dill combine well when planted together. Anise was greatly beloved by children of a generation ago and clumps of it may be found still around old farm houses. Sweet Fennel makes an excellent garnish or accompaniment for fish; it is sometimes boiled and eaten as a vegetable by Europeans. Another succulent perennial that is very rare—it is not listed in seed catalogues but grows freely around old houses—is Alecost, or Costmary. It has a broad, grayish green leaf with serrated edges; it is often falsely called Rosemary; it has the taste and odor of Mint and was much used by our forefathers as a strewing herb, both in their homes and in places of worship. Together with Southernwood, Lavender, Rosemary, and Thyme, it was scattered over the bare floors—this was long before the days of carpets and gave off its spicy odor when bruised by being walked upon.

THE various Mints belong in a class by themselves; unlike other aromatic herbs, they thrive best by the side of small streams though they will grow well in rich garden soil, if bountifully supplied with water. Of the ten or more kinds, only

two or three are of much value. Spearmint, known also as Lamb-mint in England where it is an invariable accompaniment of roast lamb, is the most usual of this family. It is excellent for flavoring dried, and adds a piquant touch to green peas as well as soups and stews. Formerly the life of the nearly obsolete mint julep, it now lends flavor to milder summer drinks; also it is the basis of a most delectable jelly made by Scotch housewives.

Peppermint is an invaluable remedy, crushed and used as a poultice, or steeped, for certain forms of indigestion; it is one of the potent harmless remedies that should be always at hand along with Catnip, or Catmint, which is a sort of cure-all for ailing cats as well as humans.

Bergamot, another Mint, brightens many of our gardens with brilliant crimson blooms—there is also a white variety—and was much in fashion in Great-grandmother's time when nosegays were carried to church to smell by way of making the two-hour sermon smacking of brimstone tolerable. In these nosegays, Southernwood, variously known as Lad's Love and Old Man, vied with Bergamot and Rosemary.

Horehound, Tansy, Camomile, Wormwood, and Rue are bitter herbs—Wormwood with the possible exception of Rue, is the bitterest known and is the basis of absinthe. Bitters and tonics are often compounded from these plants Wormwood is useful in keeping away moths, and Rue should be planted in poultry yards as it is a recognized poultry remedy. Horehound is invaluable for winter coughs.

IN REGARD to kitchen herbs, there are a number which are used for garnishing and giving pungency to salads. Parsley and Chervil are closely related; then there is Chicory, and Chives, the refined little cousin of the Onion. Chives are excellent border plants; the tender tops being sheared off as needed for use in soups or salads. Water Cress and Land Cress, known as Pepper Grass, have many kitchen uses; they are especially valuable in spring when the salts which they contain are much needed by the sluggish system which has been overloaded with rich food through the winter. Water Cress is reputed to contain iron supposed to make it helpful to rheumatic patients. This is the true Nasturtium, but the name has been transferred in popular parlance, because of similarity of peppery taste to the Tropaeolum which has its place among the vegetables as well as in the flower garden, for the spicy leaves are excellent for salads when combined with blander material, or as sandwiches. The seeds are used in making a relish, or pickled as a substitute for capers; and the flowers, each filled with a rounded ball of cottage cheese, are very dainty and appetizing.

IN THE drying and storing of herbs great care should be taken, for unless this work is properly done the flavor and keeping qualities are apt to be impaired. In the case of herbs whose leaves are to be saved, gathering should always be done in the middle of a fine, dry day just before bloom commences, for the sap is up then; or if seeds are to be gathered the best time is just before they are ready to fall, that is before they are fully ripe. If left too long many are lost by scattering and the flavor is not so strong when they remain on the stalk until over ripe.

Place the leaves of such herbs as Catnip, Sage, Thyme, Horehound, and Mint to dry in a cool place away from the direct sunlight; if dried in the hot sun the strength is drawn out. When perfectly crisp the leaves may be powdered and stored in wide-mouthed, well-corked bottles. Mint and Parsley may, of course, be similarly treated, but they are to be had outdoors until late and a small pot of each in a sunny kitchen window is a joy all winter.

Housewives of Continental Europe understand the process of blending different herbs, and some very old books go rather deeply into the subject; experimentation in this fine kitchen art would undoubtedly reveal new and desirable flavors.

Another use of herbs is the "sweet jar" in combination with rose leaves or other flower petals. A pot-pourri is a constant delight through the winter. There are many formulas for compounding these jars, according to the dominating odor desired.

No portion of the garden will afford more real pleasure than the little herb plot, while the taller growing aromatic herbs placed judiciously among the flower borders give just the note of gray-green color needed to set off flowers whose foliage is not plentiful. Finally, they draw the bees, particularly the great bumblebees, which every garden needs to make it complete.

WINTER PANSIES

LOUISE DRISCOLL

THE dancing wind in my garden,
Flinging her skirts of snow,
Pirouettes over the pansy bed
That is hidden, safe and low.

COVERED with little quilts of straw
Away from the winter skies,
While the wind is dancing above
They mix their wonderful dyes.

OH, NEVER a ship from Tyre
That sailed on the middle sea,
Had purple and gold more precious
Than pansies find for me!

AND when I see the bluebird
Come by on iris wings,
And when, on my bare plum tree,
The first song sparrow sings,

I'LL lift the woven blanket
That sheltered them from cold,
And watch the delicate, humpbacked,
Fragile buds unfold.

THE whirling wind in my garden
Plays with a scarf of snow,
She dances over the pansy bed
That is hidden, safe and low.

THE TREND OF THE DAHLIA

SEVENTH ANNUAL EXHIBITION AMERICAN DAHLIA SOCIETY

"ALL HAIL the Dahlia! King of the Flowers," exclaimed an enthusiastic Dahlia hobbyist as he entered the roof of the Hotel Pennsylvania, New York, on Tuesday, September 27th, at the opening of the four-day Seventh Annual Show of the American Dahlia Society. Dahlia hobbyists ourselves, we pardoned his enthusiasm and we might add—nearly felt ourselves saying "Amen." At any rate, we are quite certain that no other one flower could bring such enthusiastic public response. Once more the Dahlia showed it is the flower of the greatest public favor of the present time. Last year the American Dahlia Society held its first independent show in the same place, when success encouraged a step farther in securing the entire roof for this year. A wise move, indeed, for every foot of space was filled. This year's exhibition far outshone anything ever done in Dahlia exhibits in the East. The amateur exhibits were fully up to the standard of the professional, and the fact that an amateur can compete on even terms with the professional is in large measure responsible for the tremendous popularity of the Dahlia among amateur gardeners of all grades.

DOROTHY DURNBAUGH

Cactus. Clear pink showing no trace of lavender shade, nor white. A full-substanced flower for garden or exhibition (Broomall)

The Dahlia hobbyist who tries to keep a sort of mental catalogue of all that's good in Dahlias finds an intriguing problem awaiting him at the Dahlia show. He is introduced to so many new varieties of deserving quality and so many of the old favorites still hold their places of merit that he must needs attend the Show several times. It can not be digested in one visit. He must needs see it under artificial light, too, for many listless colors under daylight are gems under artificial light. This year's Show clearly demonstrated that so far as variety of color is concerned the Dahlia is in a class by itself; that future progress in the flower must be along other lines than color; that the greatest improvement shown in color during the past year was among the whites and reds; that, with a few exceptions, the California producers are making that state the cradle of the best American productions.

For the first time in the

THE GRIZZLY

Hybrid Cactus. Very dark, deep crimson, yet brilliant. A remarkably impressive flower of large size with graceful velvety petals (Burns)

THE EMPEROR

Decorative. A massive flower of regal appearance. Royal purple, that glows under illumination (Marean)

history of the Eastern Dahlia exhibitions, the whites held their own with the other colors. There were three exceptionally good whites; GLADYS SHERWOOD, a white peony flowered lady from California, with long, gracefully curved petals and perfect white centre; Judge Marean's new white POLAR SNOW—clear ivory white with petals of excellent waxy texture; WHITE GLORY, a pure white seedling in the exhibit of C. Louis Alling. These whites are an improvement on anything else shown in whites and should become popular favorites.

California creations were more in evidence than in any past Eastern Show, and we must give special mention to some of these Western wonders.

THE GRIZZLY: A dark velvety hybrid cactus red of wonderful form and exceedingly rich texture. The Grizzly is equal to anything seen in darkest reds. The specimens shown were on extra long, graceful stems. It is a very large, praiseworthy Dahlia.

THE WIZARD OF OZ: A large, even-petalled decorative, of salmon-gold and burnt orange. A flower of exceeding beauty, especially under artificial light. The Wizard is an improvement on Dr. Tevis and that is a very high recommendation.

OSAM SHUDOW: A marvelous old rose decorative, very large, and a bit coarse, but unique. We were particularly anxious to see this much talked-of California fellow and we must say Mrs. Lymbery has given us a very individual Dahlia. It has that attractive metallic sheen which seems to be more prevalent in the Dahlia than in any other flower.

FAVORITA: A dark salmon hybrid cactus of attractive even form with full centre. It shades to a lighter salmon on the edges and under artificial light looks like an old rose suffused with gold.

INSULINDE

Hybrid Cactus. A charming combination of autumn shades of tawny orange with bronze and salmon shadings. Was awarded the Garden Club of America Silver Medal as the "most artistic" bloom at the Short Hills, N. J., Dahlia Show (Holland importation)

PRACTICALLY every Eastern grower exhibited new productions and some of these deserve a description. In the Slocombe collection were two gems:

ROSA BONHEUR: A hybrid cactus in form, is a daintily colored combination with soft pink centre shading to ivory white on the margins.

WINFIELD SLOCOMBE: One of the finest of the "autumn" tints—a rich orange with terra-cotta shadings. This comes on good stems, and proves an excellent keeper. Winfield Slocombe shows particularly well under artificial light and seems to be an improvement on the popular King of the Autumn. In the collection of seedlings shown by Mrs. Stout was one of special merit, PROMETHEUS, hybrid cactus, of splendid form on a long, graceful stem. It is a soft salmon with orange rather than pink shadings.

The Marean Dahlias (by John Scheepers) were again a centre of attraction and it is only fair to say that this artistically arranged exhibit was the most attractive one in the Show. Some of the individuals deserving special description are:

THE EMPEROR: For richness of color and gigantic size there was nothing in the Show to surpass this Dahlia. Its texture is like royal purple velvet. Under artificial light it was about the most dazzling thing on exhibition. The Judge has given a great Dahlia in The Emperor, assuming that it holds up like his other productions. Mention has already been made of Polar Snow, white. The GIANTESS is another gigantic lady of soft tan, very even in color and perfect in form. Last year's stars —MRS. I. DE VER, MEPHISTOPHELES, and JUDGE MAREAN again showed their worth. It is our candid opinion that Judge Marean is the best of the Marean Dahlias. Its salmon and red color combination is superb.

This year there was a tendency to exhibit more in artistic vases and baskets. This is a praiseworthy development in as much as it shows the stem and carriage of the flower to better advantage. In the Mills Dahlia Farm collection were two very beautiful vases, one of the cactus Crystal and one of the old favorite cactus Marguerite Bouchon. In one of the amateur exhibits were three especially attractive baskets of Insulinde, F. W. Fellows, and Tom Lundy. The mere fact that a Dahlia has a magnificent blossom no longer brings it to the front as a meritorious flower. It must show good stems and graceful carriage and must be effective in the garden as well as a cut flower under daylight or artificial light.

Many of the newer Dahlias came into their own this year. Most of these have proved their merit in every section of the United States, and it was gratifying to see them in practically every amateur exhibit. Several that every Dahlia lover should know are:

INSULINDE: a golden bronze intermingled with orange and brown. A hybrid cactus of wonderful texture and form.

RED CROSS: A hybrid cactus of red and yellow. Resembles Geisha in color, but is more even and far superior.

PRESIDENT WILSON: One of the best parti-colored. A large decorative of perfect form. Looks particularly attractive in vase arrangement. Color is violet red with white splotched tips on petals.

DOROTHY DURNBAUGH: A heavily petalled pink cactus of superior form. This, we think, is the superior of all solid pink cactus Dahlias.

EDITH CAVELL: Dark salmon shading to terra-cotta red, particularly effective at night. It is one of the most graceful.

STUNNER: Pure golden yellow decorative and, we think, the finest of all pure yellow.

DAKOTA: Terra-cotta decorative of excellent form with extra long stems.

AZALEA: Soft yellow with salmon shadings. A large graceful flower of delicate color shadings.

SUNKISS: Might be called a "bicolor" hybrid cactus, with an outer series of rays salmon, the inner series yellow a good garden bloomer.

It would be unfair to give a report of this show without saying that some of the old favorites held their own with the new creations, and that as yet nothing can replace them in their respective classes. Those among the older timers that deserve this mention are: CRYSTAL, pink cactus; F. W. FELLOWS, salmon cactus; ATTRACTION, lavender hybrid cactus; MRS. CARL SALBACH, a wonderful pink decorative; HORTULANUS FIET, salmon decorative; DR. TEVIS, Salmon decorative; YELLOW KING, yellow cactus; ETENDARD DE LYON, purple cactus; GARIBALDI, red peony; THE MILLIONAIRE, lavender, shaded pink, decorative; KING OF THE AUTUMN, buff decorative; NIBELUNGENHART, pink hybrid cactus, one of the best; PIERROT, amber Cactus with white tips; TOM LUNDY, red hybrid cactus of special merit; W. W. RAWSON, white show, tipped with lavender; JOHN KEER BOREEL, orange hybrid cactus.

GLADYS SHERWOOD

Hybrid Cactus. Pure white, a California production that perhaps outclasses anything else yet seen in white. Large with graceful form (Broomall)

ROSA BONHEUR

Hybrid Cactus. Pink centre, grading to white on the margin of each petal. A graceful combination of dainty form and clear color (Slocombe)

THE WIZARD OF OZ

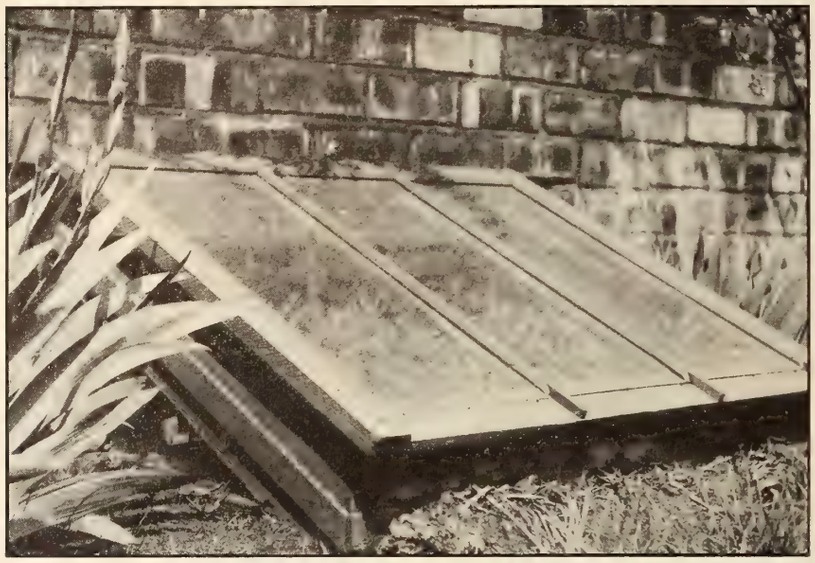
Decorative. Another striking Californian combination of orange and salmon red, with yellow dominating at the centre (Doolittle)

PRACTICALLY every leading Dahlia grower in the East was represented by a wonderful display. The best exhibits were those of J. K. Alexander, John Scheepers, Slocombe's Dahlia Gardens, C. Louis Alling, R. Vincent & Sons, Geo. L. Stillman, John Lewis Childs, Peacock Dahlia Farms, Chas. H. Totty, Stumpp & Walter, Dietz & Trivett, Chas. A. Searle, Mills Dahlia Farm, Long Island Dahlia Gardens, W. L. W. Darrell, William Jost, Huntington Dahlia Gardens, Mrs. Stout.

WINTER GARDENING FOR A SPRING START

W. L. WILSON

Soil for the Early Seedlings—What It Means to Use Frames in the Dull Days—Using the Cellar Heat as a Substitute for a Real Greenhouse



A PRACTICAL CELLAR-WINDOW FRAME

Limited as to space, of course, yet serving well in getting an early start with seeds. It is placed in position in November and banked around with heating material to exclude frost

THE only way to have a good garden all summer is to make garden all winter. This sounds like a large order, but winter gardening is done almost as much with the head as with the hands. Furthermore, it saves a vast deal of time and labor later on, when gardening time is more valuable, and assures the avoidance of many irritating mistakes.

Winter gardening really begins when the garden is cleared of the current year's crops, and spread with a layer of manure (not necessarily, or even desirably, "well rotted") from two to four inches thick. This is turned under and the ground left rough so that it will store water liberally, and, incidentally, will freeze and thaw repeatedly during the winter thus improving itself physically. In general this cannot be done before the last week in November or first week in December, as up to that time, with some protection, it is usual to carry along Endive, Chinese Cabbage, ordinary Cabbage, Kohlrabi, Brussels-sprouts Turnips, Carrots, Cauliflower and Celeriac.

When this is done, and the garden gate closed for the winter, one moves into the house to give attention to the reading that must be done, the plans that must be made and, later, the plants that must be started between then and the time that the Chives—encouraged by a protective frame—begin to yield in the very earliest spring.

OF FIRST importance is the laying in of a good supply of garden soil to fill the flats and pots later on. Sugar barrels are convenient receptacles for it; and if you suspect that it carries any pests or diseases treat it with a forty per cent. solution of formaldehyde, one ounce to a gallon of water, at the rate of a gallon to each cubic foot of earth. Such treatment also tends to lessen damping off trouble, though it will not entirely prevent it. The soil after being so treated is not disturbed for two weeks, or more. At this time likewise there should be provided good manure for the bottom layer in the flats and sand to cover the seeds planted in them.

IF THERE is no greenhouse—and most of us gardeners want one anyhow—a well-lighted and warm cellar, with east and south windows, or both, will do good service as a storehouse, work room, and "conservatory." The window-sash may be removed, and portable glass frames extended therefrom. These should be of the width and height of the windows, and not more than two and a half feet deep, so that all parts of them can be readily reached from inside the cellar; and they should have hinged tops so that they can be ventilated. Build them with tight bottoms to keep out the cold, and bank around them on all sides in cold weather. I made two of these frames—for east and south windows—ten years ago in the fall, since when I have raised all my own plants, including Eggplants, Peppers, Tomatoes, Asparagus and Artichokes. If they were made on the double-glass system no doubt they would be all the better. When the weather becomes warm enough these frames are removed and stored, and the bald spot of ground left by them is set with flowering plants that have been raised through their protection. The south frame is removed about the first of May when the Tomatoes go into the garden; and the east one about the first of June when the Peppers and Eggplants are set out.

The real gardener will have in addition to such accessories a regular coldframe out of doors, filled with manure in the fall so that the ground it encloses will not be frozen when the frame is cleaned out and put into service early in March.

WITH these facilities, or something like them, you can begin next summer's garden any time in the fall—October and early November does very well. Sow Head Lettuce very thinly in a flat. It is likely to take more time than usual to germinate, and will grow so slowly during the shortening days and increasingly cooler weather that it can stay in the flat in the window frames with no more attention than watering about once a week until about the first of December. Then transplant to four-inch paper pots, which are fitted snugly into a flat for convenience in handling. They are not to be allowed to freeze, of course, if it can be prevented, and it is not much trouble to lift them out of the frames and keep them in the cellar during blizzardy days; but if they do freeze they are not necessarily lost. They may droop until they are flat, but they will generally come out all right if kept in a cool place and allowed to recover gradually. These plants will grow very little, at best, in midwinter, and during the coldest and darkest weather will remain almost dormant. Early in February, however, their growth will become apparent, and about the first of April, when they are set out in the garden under portable frames—after having been in the coldframe from about the first of March—they are well grown and should yield good heads early in May. During coldest nights a hood made of carpet or double burlap is to be placed over the window frames to counteract the effects of a sudden chill.

THE GARDENS AT STONECROFT

The Estate of William S. Walbridge near Toledo, Ohio, Designed by William Pitkin, Jr., Landscape Architect

STONECROFT is located on the Maumee River about five miles west of Toledo. The views from Stonecroft are exceptionally fine as the river is more than a mile wide at this point, and the opposite shore has been developed as a city park bearing the name of the Walbridge family, who donated the land to the city.

The property itself is a long, narrow strip one thousand by two hundred and thirty feet; and as it has been developed in conjunction with the adjoining properties on either side, which are owned by other members of the Walbridge family, the effect of breadth and unity is far greater than commonly possible in an area of these dimensions.

In planning the gardens, first consideration was given to the character of the topography and the existing tree growth, with the result that they have an unusually charming natural setting.

The lower garden, which is planted entirely to old-fashioned perennials, is supported and enclosed by stone walls about three feet high on the inside and varying from three to sixteen feet on the outside, depending upon their relation to the ravines. In addition to being reached by the trails from the house it is connected by a wooden foot-bridge with the paths through the lawn bordering the drive.

A feature of the lower garden is a bay at the west partially separated from the rest of the garden by shrub planting, and which connects with a trail through the ravine, as well as with the little informal lawn between the two gardens. This bay has a stone seat built in the wall, garden chairs, and an umbrella table, and is a delightful place in which to serve afternoon tea. For this purpose an electrical connection is provided, as well as a water supply, and storage room for dishes is found under the stone seat.

Both the lower and upper gardens have a central grass panel to increase their apparent size and to serve as an effective base for the plantings of Roses and herbaceous borders.

The upper garden is reached by steps and walks of flagstones which tie into the flag walks of both gardens, and which are heavily bordered with flowering shrubs backed up on the east by Black Locusts so that very interesting vistas are secured looking either way. The vista toward the river is especially fine as it reveals the house framed by shapely trees.

The upper garden is planted entirely to Roses, even including in the enclosing borders, Rosa rugosa, Sweet Briar, and the Japanese varieties, all interesting for their flower, fruit, and foliage.

The garden has a charming setting among old Apple trees supplemented by the heavy ravine growth on the east. Quite a number of large evergreens have been added to the enclosing planting for contrast of foliage and as a background for the seats which terminate the two main axes.

One of these evergreen groups also screens the vegetable garden and diverts the walks leading to it. This vegetable garden is more than ordinarily attractive in that it is both utilitarian and beautiful. The long west walk is bordered by a mixture of flowers for cutting (perennials, annuals, and bulbs), backed by flowering shrubs which form the garden enclosure. A border of this kind makes an ideal place for trying out new varieties and for storing plants which may have outgrown their usefulness in the other gardens.

The east walk is bordered by bush fruits and the permanent crops such as Strawberries, Asparagus, and Rhubarb, while the central panel is devoted entirely to vegetables, which are well watered by an overhead sprinkling system. A grape arbor which covers an old-fashioned pump at the south end terminates the garden.

The location of the residence is most unusual in that it is situated on a promontory quite limited in size and entirely cut off from the rest of the estate by a deep ravine. It stands so close to the river bank that the terrace wall seems to drop straight down to the water's edge, a distance of about forty-five feet. In reality, as the plan shows, the bank has been graded to form three terraces; the slopes of the upper two being very steep and planted entirely to the Prairie Rose (Rosa setigera) which blooms so profusely and has such a fine fall color. The lower terrace slopes gently toward the river, affording a pleasant place to walk in and a convenient way of reaching the boats in summer, or the ice in winter.

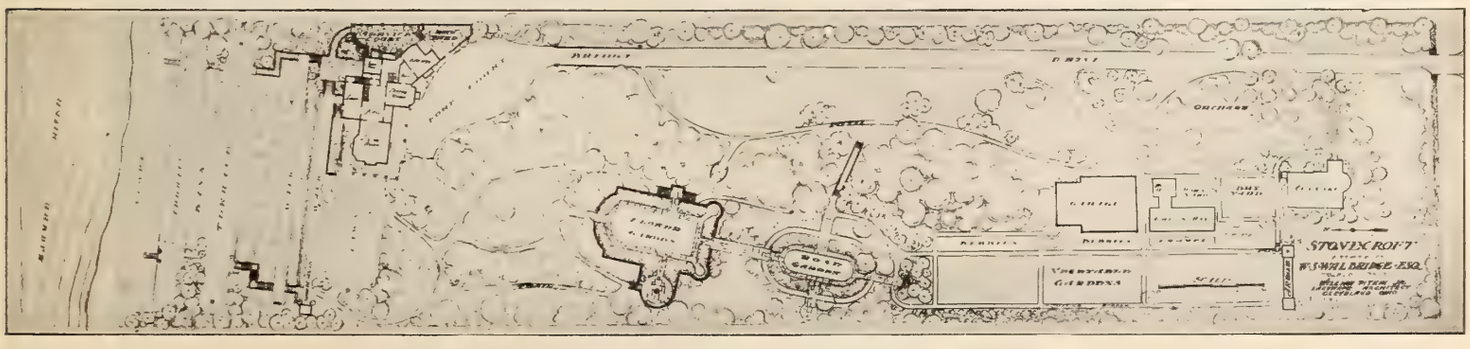
At the west end of the house and connecting with sun-room, porch, and terrace is a small, intimate lawn snugly framed by the heavy tree growth of the ravine, which is faced down by shrub planting of a harmonious character. (See illustration page 126.)

Trails lead from this lawn through the ravines descending the steep grades by a series of log steps and connecting with the gardens and the adjoining estates.

The banks along the trails are planted with Ferns and wild flowers, and many interesting woodland plants and bulbs have been naturalized in these ideal situations.

The house plan provides a large billiard room on the basement level reached from the main hall. The grades on the river side of the house have been worked out so as to have a door opening directly from this room to the intermediate platform on the stairs leading from the terrace to the river. This room with its large fireplace is one of the most attractive features of the house and serves splendidly as a resting place after swimming or skating.

The grass walk at the base of the terrace wall is framed on the river side by a straight border of Peonies and Phlox and is carried a little below the grade of the small lawn to the simple summer house set against the heavy woods and overlooking the river.



Plan Showing the Gardens and their Setting

THE BRIDGE LEADS INTO THE FORECOURT WITH A DRAMATIC FLOURISH

UPPER AND LOWER GARDENS ARE CHARMINGLY LINKED

WHERE BEAUTY AND UTILITY HAVE MADE FRIENDLY COMPACT

The Gardens at Stonecroft

Residence of
William S. Walbridge
Toledo, Ohio

William Pitkin, Jr.
Landscape Architect

Photographs by Thomas Ellison

A SHELTERED SUNNY SPOT WHERE LATE AUTUMN DAYS MAY BE ENJOYED TO THE FULL

THE NEW CRAFT OF MAKING PLANTS TO ORDER

III. WHAT CAN WE DO TO INCREASE AND BETTER THE FRUIT CROP?

J. L. COLLINS

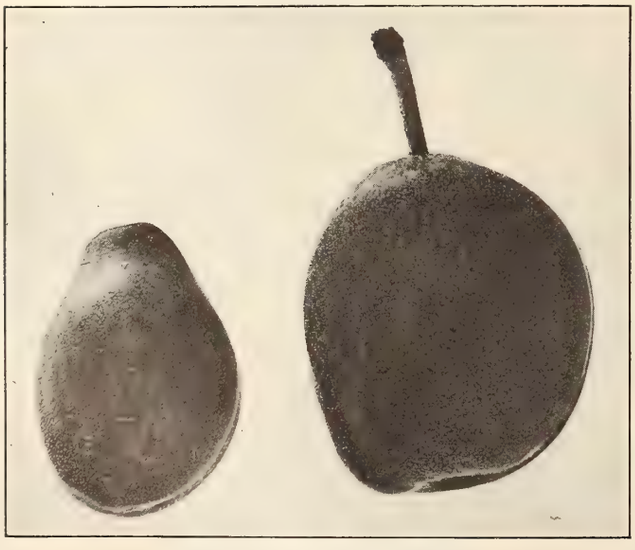
Dept. of Genetics, California Agricultural Experiment Station

EDITOR'S NOTE:—This is the concluding article in Doctor Collins' series in which he has discussed the methods of modern science as applied to the improvement of our cultivated plants. It has been an attempt to tell the non-technical gardener something of what has been going on in the advance lines of horticulture. The whole subject of breeding definitely toward preconceived ideals is so new that very little is known about it in a popular way. Hence this series of articles.

OBVIOUSLY increased production of our fruit trees would take on an interest almost of national character, but equally plain it is that such results cannot be produced in any instantaneous, miraculous way. There is no Aladdin's lamp for the plant breeder. Temporary increases may be secured by the application of fertilizers, but that is only a passing acceleration of production. The thing sought is an inherent ability of the plants themselves, by certain changes within, for the constant production of more and better fruits. This desired goal may be approached by two more or less interrelated paths, viz: (*a*) the improvement of existing varieties; and (*b*) the production of entirely new varieties.

Making Present Varieties Better

MANY orchards might be made to produce a greater net return by the process of weeding out low producing trees and replacing them with high producers. It costs as much to maintain a low producing tree as it does a high producing one.



A COMPARISON IN PRUNES

A single fruit of the Little French Prune variety compared with one of the Coates No. 1418 French Prune which originated from it as a bud sport. The new, larger variety will, of course, soon replace its parent. Fruit growers should always be on the watch for bud sports and mutations of this kind. Photo actual size

A DAHLIA MUTATION

The flower on the left is representative of an ordinary garden variety. The one on the right is a "mutant" showing a distinct change in shape and size of the petals. The color was also slightly lighter than that of the normal flowers. Changes of this kind are the starting points for the production of new horticultural varieties

In many cases where orchard records have been kept it has been found that some low-producing trees are maintained in an orchard at an actual loss!

Weeding out undesirable trees is no more expensive of time or trouble than the weeding out of the low milk producers from a herd of dairy cows, which every modern dairyman does after getting the production record of each cow in the herd. Similarly, by recording the harvest of individual trees for three or more years and computing the cost of orchard upkeep on a per-tree basis it is possible to locate the profitable and unprofitable trees. For instance, records in a number of California citrus orchards, kept by A. D. Shamel, furnish evidence of a very definite nature, and "drone" trees are eliminated either by top-working them to other more productive varieties or through

replacing by good trees. According to Shamel, buds and cions taken from high producing citrus trees will grow into high producing trees even when top worked on to trees that formerly had given low yields. Just how far these results can apply to deciduous fruits generally is still an open question, but in view of the known facts concerning citrus trees it is desirable that all bud and cion wood for the propagation of deciduous fruits be taken from trees known to be high producers. There can be no loss, and possibly much advantage from so doing, and nurserymen especially should bear this in mind.

Here are some illustrative data of trees in one citrus orchard:

Average output of Tree No. 2 for three seasons	768 pounds
" " " " " 4 " " "	443 "
Difference	325 "
Value of the product at 2 cents per pound, No. 2	$15.36
No. 4	8.86
Difference	$5.50

The annual expense per tree in another orchard was determined to be $2.25. This means that when the fruit sold at 1½ cents per pound (as in fact it did), all trees yielding less than 150 pounds were maintained at a loss. The net income from this grove of 1,525 trees was $772.56. The records showed that there were 490 trees which produced no profit. By cutting out those trees the profit from the remaining 1,035 trees would have been $1,125.95 or $1.09 as against 51 cents per tree. Such reasoning may be applied equally to trees in the non-commercial orchard where "drones" are frequent.

Practical directions for taking and using individual tree records are given in Farmer's Bulletin No. 794 of the U. S. Department of Agriculture.

Increased Production by Means of Hybrid Vigor

HYBRID vigor, as was explained in the preceding article (September Garden Magazine), relates specifically to the increase in growth, productiveness, hardiness, and disease resistance over that of the parents which often results from crossing two strains, varieties, or even species. This increase of vigor is greatest in the first generation of the hybrid and, if reproduced by seed, the plants lose a part of this vigor in each of the succeeding generations after the first. This principle of hybrid vigor, though long known to scientists and horticulturists, has seldom been directly considered in experiments designed to increase crop production. Yet unconsciously it has been utilized to a certain extent since many of our bush and tree fruits are first generation hybrids that have been propagated by cions, buds, runners, or rootstocks; and originally selected partly because of the increase in vigor and production which they showed. This has figured largely in the improvement in production secured by Luther Burbank. Also it is the reason that some of our fruits fail to come true from seed. In the seedlings which are not like their parent we see the Mendelian segregation of the characters carried in a latent condition in the hybrid. It often happens that among these seedlings there may be one or more that exhibit desirable qualities or combination of the parental characters.

In regard to hybrid vigor in Apples the New York Agricultural Experiment Station at Geneva reports that "the hybrid vigor expected of a first generation hybrid is found to a marked degree." Burbank's Royal Walnut, recommended for shade and forest tree plantings, and to some extent used as a root stock on which the buds of the commercial English Walnut are grown, is a splendid illustration of the utility of hybrid vigor. It is a first generation hybrid between the California Black Walnut (Juglans californica) and the Eastern Black Walnut (J. nigra.) [A splendid every-day illustration of hybrid vigor is seen in the Carolina Poplar, according to Dr. Henry, a hybrid of the Lombardy and pregenerata and much more vigorous growing than either of them. Dr. Henry considers the original tree "the most wonderful tree in Europe in point of vigor."—Editor.] The New Jersey Agricultural Experiment Station reports that marked increase in vigor is obtained in the first generation hybrids of certain Peach varieties.

The greatest practical utility of this phenomenon to the deciduous fruit grower lies in the use of these vigorous growing, hardy, disease resistant trees for stocks on which to bud standard varieties of fruits. The advantages of such stocks to the nurseryman and fruit propagator are only too obvious; and through them the individual gardener will be reached.

When the hybrid in addition to being more vigorous than either of the parent plants also produces abundant fruit of good quality it can be grown on its own roots and other trees propagated from it by budding it on to other vigorous first generation seedlings. Since one or both of the parents may themselves be hybrid, not all the first generation plants from a cross

A PROGRESSIVE STEP IN STRAWBERRY MAKING, THE TREBLA

A remarkable hybrid produced by a combination of nine different ancestors. Notice its upright habit and the presence of ripe fruit, green fruit, and blossoms all on the same plant at the same time. This illustrates the principle of "hybrid vigor"

between them would be alike. To my knowledge no extensive use of this principle is made in this particular way.

The Way New Varieties Appear

NEW varieties of plants usually result either from "sports," known to the scientist as "mutations," or as a result of hybridization.

The mutations may occur in the seeds, in which case they involve the entire plant and will usually come true to seed; or in the vegetative parts of the plant, as a bud on the roots, branches, or twigs.

In the latter case they form only a part of the plant and do not always come true to seed, but may be propagated indefinitely by buds, grafts, or cuttings. Varieties which originate in this way differ from their parent race in having an entirely new character—one which has not appeared in that variety before, at least to any extent.

Examples of new varieties originating from sports are plenty. The Nectarine, a variation from the Peach, is a noted example, although some people have erroneously believed it to be a hybrid of some sort.

Mutations have been recorded in Pears, Cherries, Plums, Apples, Grapes, Currants, Gooseberries, and other fruits which have produced distinct changes in size, color, texture, and flavor of the fruit. Mutations are of rather frequent occurrence in Citrus fruits. By the selection of bud sports Shamel has distinguished seven or more definite types of the Washington Navel Orange in the California orchards.

A number of years ago a French Prune tree in a California orchard was noticed to have one branch bearing fruits much larger than the fruits on the adjacent branches of the same tree. A few grafts taken from this limb produced the same kind of large plums. Later crops from a ten acre orchard which had been planted with budded trees of this mutant stock more than fulfilled the expectations as a heavy producing variety, in yielding about double the amount produced by the parent variety. This variety is now known as the Coates No. 1418 French Prune. Mr. Coates has said: "I consider the introduction of this French Prune sport the most important event in the annals of commercial fruit growing in California." Such is the popularity of this mutant where it is known that he now receives very few orders for the small French Prune from which the mutant sprang and the orders are booked ahead for trees of the new large Prune.

An Unsolved Mystery

NO ONE has yet been able either to determine or to explain the cause of "sports'" or "mutations"; but because of the importance of possible new desirable strains having origin in this way it behooves all plant growers and gardeners, to be on the alert to discover such changes in the plants under their care.

The careful selection of buds for propagation has been seriously considered by practical growers on the Pacific Coast at least, and the California Fruit Growers' Exchange, a coöperative organization of about 10,000 members, has established a department of bud selection under the charge of a trained plant breeder thoroughly familiar with the pioneering work done by the Bureau of Plant Industry and other institutions. This department makes a survey of all the citrus orchards belonging to members of the organization, selecting those trees best fitted to become the parents of the next generation of orchards. Bud wood is taken from these trees, and members of the association secure them at five cents per bud, nonmembers paying six cents.

At a recent meeting of the Avocado Grower's Association a similar department of bud selection was formed for the purpose of improving varieties and production.

Positive Breeding is for Specialists

HYBRIDIZATION as a method of producing better and new fruits, though of much interest to the practical grower, will have to be left largely to the practical and scientific plant breeders because of the time and careful attention it requires. By hybridization the breeder attempts to bring about more desirable combinations of characters that already exist in the plants at hand. It does not involve the production of new characters.

Thus Orton of the U. S. Dept. of Agriculture was able to unite in a hybrid the blight resistance of the Citron, a non-edible kind of Water-melon, with the good qualities of an edible Watermelon which itself was not resistant to the blight. The resulting hybrid was both edible and blight resistant.

A number of very promising hybrid Strawberries have made their appearance during the last few years. Mr. Albert Etter, of Ettersburg, California, a pioneer in this work, has produced several varieties, some of which have found a ready market. One of these is the Trebla which has a very much mixed hybrid ancestry. It is marked in its vigor, productiveness, and—especially—its ability to hold the berries above the ground thus preventing them from becoming sand covered, a thing the consumer will appreciate. The berries are of a medium size, deep red, and so solid that they do not break down when cooked for canning. They pick without the hull, and with scarcely any abrasion. On the originator's place it produced at the rate of 20 tons to the acre. This and other of his hybrids have been distributed over the West and in some places of the East and have everywhere made a record for themselves. [Who in the East has had experience? We would welcome a report on this berry, for if it gives a good account of itself in the East, people should know more of it.—EDITOR.]

SWEET-PEAS FOR EASTER

GEORGE W. KERR

New Winter-flowering or Early Strains of this Fragrant Flower Make it Practical to Have Blooms All the Year Round

SINCE the introduction of the Winter-flowering strains in Spencerised form —that is, with waved and greatly increased size of bloom, Sweet-peas may be had practically in any month of the year, and it is to-day one of the most important of winter and spring flowers commercially. By sowing the seed in July, flowers will be cut in October; later sowings will come in for Christmas and these plants will supply fine flowers well into spring, while further sowings in regular succession, or where the plants were brought along under perfectly cool conditions with the view of being at their best in March, will flower until the temperature under glass is too hot for them. By that time the earliest outdoor crop will be in bloom, and, given propitious weather conditions, they may flower until August. Meanwhile early or winter-flowering varieties are sown in the open early in July, from which flowers will be had in September. Sweet-pea culture under glass may be undertaken by the amateur with a full assurance of success.

THE question of temperature is of greater importance than the preparation of the soil. The perfect temperature during the early stages of growth, in fact until the flower buds are swelling, is 42 to 48 degrees at night, rising to 55, or not exceeding 60 by day. If this temperature be greatly exceeded, growth is hastened with the result that the tops become thin and weakly, while the roots do not function properly; flower buds are produced prematurely and they are small, borne on short stems, and their season of blooming much shortened. Sweet peas (indeed all Peas) are impatient of heat. The grower must aim for strong, deep searching roots in the initial stages, and it is only when the temperature is kept down that such root action can be secured.

When the buds are showing freely, and beginning to swell, raise the night temperature to 50 degrees, if kept any lower the edges of the flowers will develop an objectionable green margin. Some growers advocate a night temperature of 55 degrees, but there is then a likelihood of short stems.

Good Sweet-peas can be grown on raised benches, but lacking the depth of soil necessary to the extended life of the plant, the flower stems shorten rather early. An extra top dressing and liberal watering will keep them going until the plants attempt to get through the roof. They may also be grown in large pots or tubs; but the perfect place is a solid bed on the ground where the soil will extend to a depth of two feet, though such a depth of soil is not an absolute necessity.

Good fibrous live loam, inclining to be heavy rather than light, with which is thoroughly incorporated well rotted manure makes an ideal compost. Suitable and desirable proportions of the above are two to three parts loam to one part manure, adding bone meal or acid phosphate eight ounces to each barrow load of the compost. When the bed is complete, finish with a light dressing of freshly slaked lime, pointing it into the surface, tread the bed, and finish by giving it a thorough watering. This should be finished at least one week previous to seed sowing by which time the surface soil will have sufficiently dried off to allow of this operation.

At this season of the year there is always some risk at-

tending seed sowing, for, unless soil conditions are just right, the seeds may rot, wherefore I sow in clean sand. When the bed is ready to receive the seed, a furrow or drill is made two inches deep; the furrow is then filled with sand, in which the seed is sown about one to one and one-half inches deep. The seed row is then watered lightly, no further watering being required until the plants are well through the soil.

If the bed is at present occupied by other plants, start the seed in flats or pots, surfacing them with sand into which the seed is pressed to a depth of half to one inch. Kept in a cool house the seedlings will come along slowly and be sturdy plants by the time the bed is ready for them.

Beware of sowing too thickly. Space the seed two inches apart, later thinning out to four or six inches apart. When transplanting I usually allow six inches clear space between each, being careful to disentangle any twisted roots, making the hole sufficiently deep to take care of them properly; this is most important. Until the turn of the year, when the days are becoming longer, give water carefully, and only if the soil is becoming dry. This applies to solid beds. On raised benches or when grown in pots or tubs water will be a regular necessity. During the short days it should be given in the morning, and only in clear bright weather. With the advent of longer days accompanied by bright sunshine, water must be given regularly and copiously, and to keep the heavy vines in perfect health, they should be syringed occasionally. When the vines are flowering freely a top dressing or mulch of well rotted manure will be of much assistance, as also liquid manure, but avoid overdoing the latter stimulant, as there is always the danger of an extra dose causing the buds to drop.

Sweet-peas require plenty of head room as the season advances, also liberal spacing between the rows. Let them be about four feet apart. From November sowings twelve feet of height should be ample.

A SUDDEN change in temperature will often cause mildew to appear, but if taken early, dusting the flowering vines with sulphur, it is readily subdued; keep the atmosphere as dry as possible, and avoid syringing the vines for a few days. If green fly appears fumigate every ten days with some nicotine preparation.

Do not attempt to grow the ordinary, summer-flowering, Spencer Sweet-peas under glass if early blooms are wanted, the proper and only type for this purpose is the Early or Winter-flowering strain. If varieties of that strain be sown early in November there will be no lack of beautiful, fragrant flowers from March until May. Winter-blooming Spencer Sweet-peas may now be had in practically all the shades found in the older type.

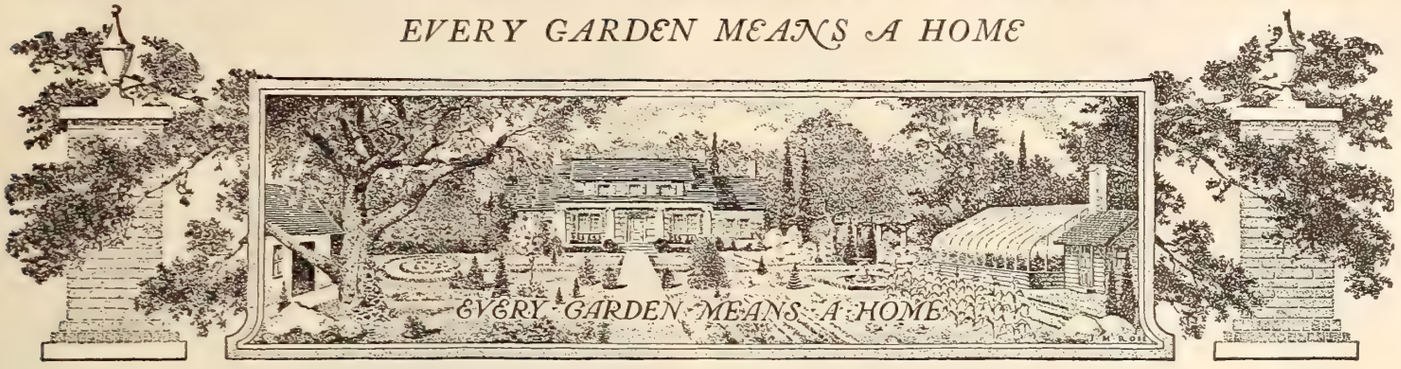
Good, reliable varieties for present sowing are: Snowstorm, white; Loveliness, white, suffused pink; Enchantress, deep pink; Daybreak, cream-pink; Flamingo, light orange; Glitters, orange-scarlet; Illumination, cerise; Lavender King, lavender; True Blue, violet-blue; Rose Queen, rose-pink; Rosebud, clear rose; Early King, crimson; Glorious, purple; Daintiness, white, edged rose; Exquisite, cream, edged rose; Early Aurora, white-flaked orange-scarlet.

MID-MARCH IN THE GREENHOUSE

When man's wits pitted against nature's inclemency achieve a triumph like this, the successful grower regards his handiwork with a pardonable thrill, and indoor gardening becomes imbued with incomparable zest

AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME



WHEN PLANTS ARE BROUGHT INDOORS

AUTUMN is a significant period in the life of the garden; and no less wonderful than significant. Its phenomena are those of transition. A season of activity draws to a close; a period of recuperation is at hand. The year's growth has been made, the manufacturing operations in the leaf cells are over, and the plant, before shedding its leaves, proceeds to absorb from them into its permanent tissues, any remaining nutritive materials; in other words, it drains its now useless vats and retorts preparatory to "scrapping them" and closing down for the dull season. The formation of next season's blossom and fruit buds is being carried to completion.

These miracles may go on deep within the plant, even until midwinter—but merely as the gradual finale of the fall programme. But sooner or later, under the spell of cold, of frozen soil, of a discontinued moisture supply, the life processes dwindle to their lowest ebb—and the plant world sleeps.

THE change that autumn brings to those plants that we lift from frames or borders and take into our greenhouses and conservatories, living rooms and enclosed porches, carries with it a certain degree of danger to them. Here are subjects that, having just completed a busy season and meriting a well earned rest, are tumbled out of their comfortable beds, jammed into the narrow confines of pots and boxes—often at the cost of cramped and wounded root systems—and set down amid the bustle and brilliance of an environment that permits anything but rest; an environment in which artificial heat and protection from the elements tend to induce a fresh, even more vigorous activity. Verily, for them life has become a continuous performance, an unbroken round of "eating, drinking, and merriment" at high pressure. Little wonder that, unless steps are taken to meet the situation and offset its demoralizing tendencies, many a plant suffers the inevitable disastrous effects of "burning the candle at both ends."

Of the factors that change when a plant is brought indoors temperature is of first importance, and it is generally accompanied by a dryer atmosphere. There follow possibilities of complications from sudden drafts of air from opened windows, and the wide, daily variation from the maximum heat of noonday when both sun and furnace are working full blast to the chill of the midnight hours when households are at rest and furnace fires are banked. Under greenhouse conditions where the plants' welfare alone is considered the conditions of heat regulation are almost reversed.

The degree of light that prevails under the new conditions is of fundamental importance, not only as the source of energy in the action of the leaf, but also in its physical effect, since "the more intense the illumination the greater the evaporation" and, in consequence, the heavier the tax upon the roots and the circulatory system. Further, the supply of moisture must be considered in relation to air, heat, and light; and closely related to it is aëration of the roots, the two being, as it were, complementary, because a soil in which there is too much water necessarily lacks air.

THE case of the transported plant is indeed comparable to that of an invalid recovering from a serious operation. The sort of treatment then "indicated" (as the doctors say) is rest, quiet, a darkened room, very light and simple diet.

This, being interpreted, means for our plants no increase in temperature at first, and a very gradual rise later as the plant becomes established. It means light conditions as nearly as possible like those of its former location. Ordinarily this calls for more sunlight than the average interior can supply, so the other two factors must be proportionately held back. On the other hand, a glass-roofed conservatory or an unshaded greenhouse may produce a more intense, blistering flood of direct sunlight than many plants have been accustomed to in their outdoor environment and also a greater degree of accumulated heat. In a dimly lighted location a plant will develop weak, elongated tissues just as a potato puts out straggly shoots in too warm a cellar; too much light, on the other hand, stimulates leaf action and may result in the assimilation of plant food faster than the partially established root system can supply it. In practice, it means less water than we are in the habit of giving house plants of all kinds.

A healthy, vigorously growing plant normally requires plenty of moisture—but think of the droughts that even the plants of humid regions endure year after year without injury. Adopting Nature's formula, we should wait until a plant becomes definitely thirsty before giving it a drink, until the pot when struck sounds hollow; and *then*, we should give it a thorough soaking. The surface of the soil and the outside of the pot naturally become dry long before the soil and the root mass within loose moisture; yet better that they go dry now and then, than that they be kept constantly water-logged. Roots in permanently saturated soil—as is all too often the case with house plants—not only suffocate slowly and surely, but also suffer from nothing less than alcoholism, due to the formation of alcohol, fusel oil and certain acids. These poisons not only hasten the disintegration of the old root tissues and prevent the growth of new ones, but also, being carried into the upper portions of the plant, bring about fatal cases of auto-intoxication.

This being the fate of many a healthy plant as the result of careless, injudicious watering, how much more severe the effect on one newly transplanted into an environment to the soil, air, light, and temperature of which it has yet to become adapted. Such a plant does not want to be forced; it is not in a condition to endure increased heat, humidity, moisture, and feeding.

But with restrained treatment, letting the plant very much alone, nature will itself evolve an adjustment, even if in the process it strips the plant of some of its leaves to acquire the proper balance. This, indeed, often occurs when plants are shifted into darker quarters, and is no cause for anxiety. They'll recover in due time.

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

Why Not a Southern Issue of The Garden Magazine?

To the Editor of The Garden Magazine:

I AM very much interested in the California articles that you publish from time to time, and have often wondered if you would ever have an article on southern gardening?—P. W., *Texas.*

"How Much Does Watering Help?"

To the Editor of The Garden Magazine:

I READ with interest your September editorial on this topic as it is a question of vital interest to us. We are dependent upon cisterns for water, and we do love flowers. Our garden is a fair sized one, and a mass of blooms from March, with Snowdrops and Crocus, to November, and even sometimes December—if the season is open as last year was. We never can water. We do cultivate as much as we can, but I am never without flowers for myself and my friends and generally have more than I can use. So I feel I can positively say watering is not necessary to the production of good flowers or vegetables, for we have all we need of both and enough vegetables over to can. The flower which has lent my garden certain neighborhood fame is the large English Delphinium growing to a height here of seven or eight feet.—J. C., *Kentucky.*

Where to Get Fuchsias

To the Editor of The Garden Magazine:

IN HIS article in the September number of The Garden Magazine Mr. J. Horace McFarland asks who has different varieties of Fuchsias? I am very glad to be able to answer his question, for the lovely Fuchsia always brings childhood memories to me and I am often regretting that it cannot be grown successfully in our hot climate. Fuchsias do remarkably well in the cooler parts of California. The California Nursery Co., Niles, Calif., listed seven varieties in the 1920 catalogue, but a year ago I noticed perhaps twice as many growing in the nurseries at Niles. No doubt, Mr. McFarland could get all the varieties by writing to the president of the California Nursery Co., the well known horticulturist, Mr. George Roeding.—Paul Winkler, *Dallas, Texas.*

We Are Grateful and Encouraged

To the Editor of The Garden Magazine:

JUST a word to say how much I am enjoying my September number of The Garden Magazine, which grows better with every successive issue. "Walks and Talks at Breeze Hill" by J. Horace McFarland is most interesting and suggested to me the idea of sending you these leaves from a Fuchsia which has been most unhealthy all summer. Can you give me any information as to the disease and how to remedy it?—Maud A. Queen, *Mass.*

—The leaves do not show any evidence of parasitic disease, but the dried, browned tips and edges etc., suggest the effect of "burning," i. e., collapse of the tissue through excessive direct sunshine, coupled with a stagnation of root action. The Fuchsia delights in semi-shade, and a cool moist air.—Ed.

To the Editor of The Garden Magazine:

A WORD in appreciation of your various articles on Evergreens. There is a tremendous sale of evergreen plants throughout a large part of the U. S. and a great percentage of house owners love and appreciate them, yet yours is the only magazine that adequately presents them.—H. F. Wilson, *Morris Park, N. Y.*

Couch, Scutch, Twitch or Quitch Grass

To the Editor of The Garden Magazine:

IN OUR small plot in this Baltimore suburb, there has appeared a plant known on our farms as Wire-grass—probably brought in with some of the "good top-soil" from the country. Two years ago when this pestilential plant showed increasing strength we had the terrace and little lawn dug up and we hoped every root destroyed. Nevertheless, it appeared the following year and again this summer. Of course, it is taken up as it shows on the surface, but the invaded area evidently enlarges, showing great underground activity, and the work of eradicating obviously must be done in some other way.

In times past The Garden Magazine has proved a tower of strength, and I hope once more to find assistance. Can you tell me how to destroy this plant?—Lu Wilson Sperry.

—An enclosed specimen is what is known variously as Couch Grass, Wheat Grass, Scutch Grass, Twitch Grass, Dog Grass, Devil's Grass, Whickers, Wire Grass, and several other names, the multitude of which give evidence of the commonness of the pest. It is a troublesome weed and multiplies from each joint that is broken. In the "Manual of Weeds" by Ada Georgia the recommended course to follow is:

"An early fall plowing with the furrow turned just deep enough to cut the matted rootstocks free from the subsoil (usually about six inches) followed by toothed harrowing to work the soil free from the rootstocks so that they may be raked into piles to be dried and burned is a good way to fight this grass. Two such plowings should be done in the fall, the second crosswise to the first, and with early and careful cultivation in the spring, followed by a hoed crop thoroughly tilled until midsummer, will clean out the weed. And again small areas of the pest may be smothered by being covered with boards, or spreading thick manure or straw (not less than a foot deep and well packed down so as to exclude air) or with tarred paper pegged down so that the wind cannot stir it. Two or three months of such exclusion from air and sunlight will leave the rootstocks withered and dead."—Ed.

As to "Blanket Flowers" and Fuchsias

To the Editor of The Garden Magazine:

A LETTER which came to me through The Garden Magazine has in it a bit of interesting information about the reason why a Gaillardia is called a "Blanket Flower." Mrs. John Goddard (Monument Beach, Mass.) writes: "Twice lately I have seen the name 'Blanket Flower' for the Gaillardia called 'absurd' and 'unaccountable.' You may be interested to know that old-time ladies used to copy the flower in crewels in the corners of their home-made blankets. I have seen and used such blankets that were 'handed down.'"

I confess to being very much gratified at the way in which I hear from the stuff you permit me to get into The Garden Magazine. The periodical is evidently read by thoughtful, cultured people the country over. For example, I have two lots of Fuchsias coming to me on account of the September complaint that I did not know where to get a collection; and a third offer from California!—J. Horace McFarland, *Harrisburg, Pa.*

What Are the "Best Peonies?"

To the Editor of The Garden Magazine:

IN A recent issue your comment on the Peony symposium of the American Peony Society was, it seems to me, accompanied by the wrong table of the up-to-the-minute varieties. The table you used was one comparing this latest voting contest with a former one of some years ago. The correct table of those receiving the highest vote is on pages 33–36 of the Symposium Bulletin. So much care and expense has been taken to attain this result that I suggest you publish that table so that all flower lovers can see that the American Peony Society is getting good results. It is the fond hope of most Peony growers that in a few years the many hundreds of present varieties will be reduced to a point where only those voting above eight on a scale of ten points will be grown.—Frank W. Campbell, *Detroit, Mich.*

—The list published with our comments in the August Garden Magazine was the one embracing all the varieties "receiving 20 or more votes in both symposiums"—there having been an earlier vote taken in 1919—and was selected, to quote from the bulletin because "such kinds . . . may be considered as definitely placed and removed from the necessity of further discussion." The other list to which our correspondent refers is an ordinal or grade record in two columns: 1st the varieties whose average rests on more than 20 votes in the latest symposium; and 2nd those receiving less than 20 votes "whose position is therefore still open to question," to again quote the Bulletin. As to which is the "correct" list all depends on the angle of approach. The leaders in this graded list are Le Cygne, Kelway's Glorious, Therese, Solange, Mme. Jules Dessert, Tourangelle, Festiva Maxima, Walter Faxon, E. B. Browning, La Fée, M. Jules Elie, Phillippe Rivoire, Frances Willard, Lady A. Duff, Martha Bullock, Baroness Schroeder,

La France, Longfellow, Milton Hill, Raoul Dessert, Rosa Bonheur, Sarah Bernhardt.

The complete list is quite lengthy and interested Peony students cannot do better than study the whole report in detail in the Bulletin which can be had from Professor Saunders, Secy., Clinton, N. Y.—Ed.

Roses Instead of Weeds

To the Editor of The Garden Magazine:

SPRINGFIELD, Illinois, has entered actively into a campaign for a city beautiful. This includes among other things the planting of Roses, White Clover, and similar flowers along the edges of streets

ROSES AND WHITE CLOVER MAKE DRIVING PLEASURABLE

On the outskirts of Springfield, Illinois, progressive property owners are planting vacant lots with delightful effect which is enjoyed by every passerby

in the outlying districts, not only in front of residences but on vacant lots. Once these flowers have made a stand, little or no attention has to be paid to them, for all weeds are crowded out. The result is most attractive, and the plan is one that can be easily and cheaply carried out in almost any community.—Robt. H. Moulton, *Illinois.*

Mrs. Pleas on Raising Seedling Peonies

To the Editor of The Garden Magazine:

IN HIS very helpful article, "What America Has Done for the Peony," in the September, 1920, issue of The Garden Magazine, Professor Saunders says "Peony seeds do not germinate until the second year," but the fact is they will germinate as soon as ripe if given the opportunity. Often when picking up those that have fallen before all are ripe I have found one that has been kept moist and has made its own root; it is being allowed to dry and harden that retards germination. Kelway's single white, The Queen, was our only plant bearing seeds, blooming before any other kind was open; it was not hybridized, yet from this one planting I have every color and shade from White Swan to Black Beauty.

Since I had been assured that the seedlings would come single, small, and of a poor color, I had not cared to save seed; but seeing the tops weighted to the ground, spilling seeds by the handful, the appeal was too great. Aware that hard shelled seeds require being exposed to the vicissitudes of winter to insure prompt germination, we stratified them in sand in a box set in the ground to winter over. In the spring when the first vegetables were planted, the Peony seeds were lifted from the sand and drilled in, the same as garden Peas. They came up as promptly as did the Radishes, but a hard freeze that night killed every plant above ground. Not having had any great expectations, I was not greatly disappointed. When the cold wave had passed, I discovered two bright crimson ribbons stretched along that portion of the row that had been shaded from the warm sun by the top of a large Plum tree which had retarded their germination.

When planting the garden I began thinning the little Peonies by carefully lifting out a trowelful here and there and filling vacancies. This thinning out has been kept up annually since. These remained where they originated until 1913 when my favorites were lifted or divided to bring to California. Less than one thousand of this first planting escaped freezing. From this one planting of single white seeds came Elwood Pleas, Midsummer Night's Dream, Gem, Mary, Quaker Lady, Shabona, Mad. Pleas, Walter Morgan, Golden Wedding, Nellie Pleas, Gypsy Queen, Laura E. Pleas, and Rosy Dawn in doubles; and in singles, White Swan, Wild Rose, Golden Cushion, Pocahontis; among the Japanese, Dr. Edgar Pleas, Novelty, Altar Candles, and Golden Nugget represent the best.

The seedlings are subject to winter loss. I noticed that I did not have as many plants the second year as the first, but not seeing any dead, or injured by animal or insect, I could not account for it until going through my garden during a February thaw when I found broken three-inch roots of little Peonies standing or lying along the rows, seemingly uninjured. I put a finger on each, thrusting it back in the ground. Apparently all lived. I obviated this loss after this by giving all one and two year plants a heavy mulch over winter. I have found divisions that had lain out all winter that lived when planted. Some growers advise fall planting for the seed, but nothing is gained and even though none are washed out by hard rains, the weeds will get well started before the ground is in condition to cultivate.—Sarah A. Pleas, *Whittier, Calif.*

How I Force Iris

To the Editor of The Garden Magazine:

I AM an Iris enthusiast in a small way and I love to experiment with them. Have raised some lovely ones from seed—Japanese, German, and Spanish—and I have made one discovery that gives me much pleasure: that Iris can be successfully forced. About Christmas every year I take up clumps of German Iris, the old Blue Flag usually, since I have more of them; put them in flat pans in a sunny window in my basement and before Easter they are in full bloom, more exquisite and ethereal than those which bloom in the open, and at that season as rare as an Orchid. I am going to try several varieties this year among the earlier bloomers and hope to have flowers by St. Valentine's day.—Mrs. J. H. Lide, *Corinth, Miss.*

What's Good in Yellow Flowered Perennials?

To the Editor of The Garden Magazine:

I SEE myself quoted in September as having erstwhile "damned with faint praise" the Helianthus. Before the rubicund face of old Sol, H. annuus, peering at me over the back fences of my memory, let me do justice to this grateful (if oft oppressive) genus whose golden horde, the myriad descendants of garden outcasts, are at the moment striving along the marsh road "to be a counter-glory to the sun." Quantitative inspiration for much obvious sentiment, behold them, these outcasts glorifying the waste places—rigidus, Miss Mellish, Wolley Dod and the refined mollis, along with Golden Glow (Latin name upon request) in vast assemblies, thousands and hundreds of thousands standing high against the gray-green marsh distance and the nacre of the September sky. I would not say that "they burst upon the inward eye" exactly; my inward eye is more subtle. But their numbers do strike a sort of terror into my heart.

I have seen angustifolius, but I have not grown it. Mr. Lane, in his description, following the example of Bailey's august encyclopedia, omits the one vital particular. Does it sucker out? Angustifolius and questifolius are, of course, one; q for a, u for n, g for e (the Greek e)—the error explains itself; and it is cheaper for the seedsman to persist in it (botany be damned!)than to have a new page plate for his catalogue made correcting it. Questus-leafed? Questus——?

My problem, as I recall it, was to find a substitute yellow perennial for Coreopsis. The daily task of removing the dead flowers from this estimable plant has brought me to the hard necessity of exiling it.

There are many yellow perennials, but not one that quite filled the gap. Anthemis tinctoria Kelwayi (resonant name!) makes a good beginning, but presently looks as if the dog had been lying upon its feather bed. It is also pervasive and eradicable as to seedlings. There is a lovely yellow plush Achillea, Parker's variety, but my acquaintance with it is limited. Rudbeckia laciniata, single, and Golden Glow, may be dispensed with without comment. Yellow Iris in its brief season, and yellow Hollyhocks and yellow Day-lilies and Oenothera Youngi (worm eaten unless powdered) and Doronicum, lasting into June, these contribute their portions of captured sunlight, stolen gold, to my garden under the trees. Yellow is the translation of sunlight into color. Shadows are blue, the complementary color. I must have yellow against my shadowy backgrounds.

Heliopsis Pitcheriana blooms in early summer and keeps right on blooming and has the added virtue of neither mildewing nor making suckers. Its height (4 to 5 feet) and smallness of flower (2 to 3 inches), its suceptibility to black aphids, and, in some gardens, tendency to seed itself are in its disfavor. But the new form, scabra zinniaeflora which grows but three feet high and has coarse, double or semi-double flowers offers possibilities to the hybridist. That was the burden of my original communication.

Of the Helianthus I prefer the annual black-disked cucumerifolius. These increase in bloom all summer, whereas the perennial species give me only a few days of glory. For late summer I recommend to Mr. Lane, who probably knows it, the daintiest of Sunflowers—no, not a Sun-flower—though perhaps the name Helen is derived from helios) Helenium, Riverton Beauty or Riverton Gem. It is a striking cut flower, with its spherical dark disk crowned with filigreed gold. It makes stocky clumps and sustains its height gracefully upon its oddly flanged stalks: a good thing too little used. The cultivated Black-eyed Susan (Rudbeckia Newmanni) commends itself to my midsummer lassitude for its durable blooms. Its flowers remain unfaded for nearly three weeks. Its black and gold brilliance is in good proportion to the blazing masses of late Phlox.

I aspire to the yellow Eremurus Bungei—six years from seed. But worth it!

Mr. H. S. Adams sees no reason why Delphinium nudicaule should be a stranger in Eastern American gardens, and declares that it is fairly common in English rockeries. I do not recall mention of it in any English garden book, and my own experience with it, as with other Californian species, makes me wonder how it can be grown at all in England. Adapted by nature to a rainless dry season it goes into a midsummer dormancy which is the closest possible reproduction of death and corruption. Nothing remains but a few bits of disintegrated root, finger lengths of dry punk, susceptible under conditions of moisture to the ravages of sow-bug and wire-worm. With regard to frost they are apparently hardy enough. I crave information concerning the Persian species, D. Zalil, presumably of the same category. The seeds of this are commonly offered; but who has ever grown it from seed? In my imagination I class it with the yellow Aconites. Nor does D. nudicaule show for much, saving oddity.—Julian Hinckley, *Long Island, N. Y.*

—After writing the note on Helianthus angustifolius which appeared in September I found it listed in the Michell catalogue (Philadelphia). This spring a great many volunteer seedlings came up around my two old plants, and I transplanted fully fifty of them, all of which are doing well and some of which will be five feet high this fall.—Bernard H. Lane, *Alexandria, Va.*

RED-FLOWERED HELENIUM RIVERTON BEAUTY

Such a cheery and enthusiastic late summer bloomer that Sneezeweed seems a wholly unappreciative misnomer and even the more gracious Helen-flower rather colorless and inadequate

DAY-LILIES THAT DELIGHT

The Yellow Day-lily, slender, fragrant favorite of old-fashioned gardens, though challenged by resplendent modern rivals, continues still to charm

The Hydrangea in Winter

To the Editor of The Garden Magazine:

WHAT is the proper way to handle Thomas Hogg Hydrangea and others of that type for the winter? Shall the growth be cut back now? Shall they be retubbed now, or later, if at all? And the soil? They are evidently great drinkers; but do they prefer shade? Kindly answer also any other questions about them that I have forgotten to ask.—V. A. N., *Rochester. N. Y.*

—Well, we'll try to cover the entire field of possibilities; but don't blame us if we miss a point. We prefer to reply to specific inquiries. Thos. Hogg Hydrangea is a distinct white variety of the old Chinese H. hortensis, and will not stand more than ten degrees of frost. The plants of this group usually complete their growth by September, when water should be gradually withheld. In November, or as soon as severe frosts occur, remove to a frost-proof pit or cellar—and in the latter take care that they are placed away from the dry heat of the furnace. Water only enough to prevent shedding the leaves. Do not prune at this time as they have formed buds for next year's work, and to cut away the branches now would seriously interfere with their development next spring—prune to symmetrical form while growth is being made during the summer. In spring, as soon as frosts are past, the plants may be put outdoors, and retubbed as desired, and any weak and overcrowded growths removed. Good drainage, and

A GIANT GOLD-BANDED LILY (Lilium auratum)

This magnificent specimen throwing out thirty-four flowers at the height of nine feet from the ground, evidently finds conditions to its liking in the shallow soil of the terraced N. Carolina garden shown at right

firm potting are essential. A suitable soil can be made up with a mixture of good garden loam, three parts, leaf mold one part, and sand one part; with either bone meal, dried cow manure or other fertilizer to supplement it. During summer water liberally and give occasional doses of liquid manure until the flowers appear.—Ed.

Is This the Largest Gold-banded Lily?

To the Editor of The Garden Magazine:

LAST season I sent you a photo of our special auratum Lily, at that time something about 8 ft. with 14 blooms on a single stalk. This year it was 9 ft., 2 in., with 34 blooms on one stalk. This is such an unusual growth that I am tempted again to send you photographs of it. Its position amongst so much shrubbery and absence of open background makes a poor picture and does not do it justice. Many of our visitors saw it and declared it to be the most marvellous flower display on a single stalk they had ever seen, and I am inclined to believe it is the largest auratum Lily ever produced in the country. As I received a good many letters after its appearance in your publication last February this may again interest others in the possibilities of this very beautiful and fragrant flower. The young lady in the photo is nearly 6 ft. tall and you will note that each flower is nearly as large as her head. The entire flower group is a solid mass about 3 feet long and 20 inches in diameter.

The soil in which this remarkable specimen grows, so far as I know, is the same as in other parts of the garden which is built in terraces on the hillside; it was difficult to excavate to any depth at this particular point owing to rotten or disintegrated rock, so that there is not more than 10 inches of soil where the Lily stands. The roots have evidently found favorable conditions in this decayed rock, gray clay, and sand with some felspar—this may give some stimulating quality, but I think in all probability it provides perfect drainage, and at the same time protects against frost or more especially against field mice, or moles, or some animal that eats the bulbs. The especial point of interest is this—I see continuous complaints about field mice or moles and find from experience that field mice destroy many bulbs and I think many Lily bulbs as well as Tulips, Hyacinths, Gladiolus, etc. I believe that, if gardeners would not object to the trouble, any bulb can be protected successfully for many years by surrounding it by 2 inches of coarse sand, and outside of this 4 inches of gravel on the sides. If planted 10 inches deep, as a Lily should be, and on its side, it is better not to mulch, as this also attracts field mice.—Henry W. Sloan, *Highlands, N. C.*

Increasing Lilium Auratum

To the Editor of The Garden Magazine:

I ORDERED three bulbs of Lilium auratum last summer but as it was well into December before they arrived, they wintered in a box of sand in the cellar, which was never allowed to get entirely dry, but was never very wet. When they were taken out as early as possible in the spring there were a few loose scales. I had learned from experience, inspired by The Garden Magazine, that Lilium candidum could be increased in a box of sand, when small bulbs would form at the base of the scales; so I thought I'd try the same thing with these scales. I dug one or two out about the middle of June, but there was no sign of little bulbs. I hadn't much hope, but watered them occasionally, until the other day my small son tipped the box upside down for a seat. What was my surprise and delight to find, on picking them up, that those scales had little bulbs growing not only at the base, but up and down the sides. They are now beginning to send up little green shoots of promise that when the large bulbs in the garden fail, there will be others—perhaps enough for a good big "mass" to take their place.—Rachel Caughey, *Antrim, N. H.*

Another New Rose

To the Editor of The Garden Magazine:

IT MAY interest your readers to know that the following Rose has been offered for registration and passed upon by the Registration Committee of The American Rose Society: name—William Wright Walcott; class—H. T. Forcing; parentage—sport from Richmond & Ophelia; description: habit of plant—vigorous upright; character of foliage—dark green no black spots; freedom of growth and hardiness—grows free, hardiness not tested; flower—full; color—two shades pink; outer petals deep pink, inner light; form—outer petals reflexing; fragrance and bud—very fragrant good bud; petalage—45 to 56; freedom of bloom and lasting quality—very free, good keeper, good winter Rose. Offered for registration by Robert T. McGorum.

If no objection to such registration is filed with the Secretary of the Society the registration will become permanent.—John C. Wister, *Secretary.*

Saving La France Raspberry for Posterity

To the Editor of The Garden Magazine:

YOUR note about the "saving of the Poet's Narcissus" by Mr. J. K. M. L. Farquhar in September issue is an interesting illustration of the narrow margin by which many treasures are nearly lost to man. A somewhat similar case is La France Raspberry, the existence of which in commercial quantities is really the result of the interest and energy of one keen-eyed individual. I have just recently eaten some of the fruits, and simultaneously decided to procure some of the plants e'er snow flies. I feel that we are generously indebted to Fate—or whatever is responsible—for the continued existence of La France.

The facts, briefly, are these: in 1913, Alius, superintendent of the estate of Mr. J. B. Cobb of Stamford, Conn., noticed rising out of a jungle of tangled, neglected Raspberry vines of many varieties a few canes of unusual size, vigor, general appearance, and prolificacy. More-

over, the berries were exceptionally large, sprightly in flavor, of a delicate pinkish color without the usual raspberry bloom, and were noticed very late in the season. Mr. Alius was mildly interested—perhaps curious would be a better term—but as it hadn't occurred to him to do any experimenting or propagating, he merely, watched the bushes and told a few acquaintances about them. Among these was Mr. F. A. Bartlett, by profession a tree-repair expert, by inclination a sort of experimental horticulturist on a small scale, to whom ultimately, Mr. Alius gave the new, strange plants to test out. After a season or two Mr. Bartlett urged Mr. Alius to propagate the new berry and to arrange for its commercial introduction; offering all the plants or cuttings necessary from his own little fifty foot row. During the last couple of years thousands of plants have been set out in home gardens; meanwhile Mr. Bartlett continues peacefully to cultivate his garden patch in the knowledge that a berry of real merit has been saved from extinction.

There is room for conjecture as to how La France came into being. It may be a true "sport"—on the other hand, here is a chain of circumstantial evidence suggesting a hybrid origin. The original plant appeared in a bed containing a number of varieties, including most of the better-known standard sorts and some of the newer ones, including remnants of a collection originally imported from Europe by the superintendent who preceded Mr. Alius. Probably all the foreign strains succumbed. But one of them may have had time to pollinate or be pollinated by some hardy native sort. Of the seedlings so produced, one may have proved hardy. At any rate one strange plant grew up and multiplied until it caught Mr. Alius's attention.

In support of this hybrid theory there is the fact that officials of the Department of Agriculture have no record of any variety bearing berries of the peculiar La France pink color, wild or cultivated in this country, although something of the kind has been heard of in Flanders. —E. L. D. Seymour, *New York.*

The Robin and the Cherry

To the Editor of The Garden Magazine:

WHILE there are a good many birds which do damage to the small fruits of early summer and late spring, the robin is certainly the chief offender; and the Cherry-tree is the worst sufferer. It is true that catbirds, thrushes, and those perniciously useless birds, the starlings, take some toll of our garden fruits; but the robin does nearly all the damage. This is due to two facts: the robin's insatiable appetite for the very fruits for which we have an identical craving; and the extraordinary increase in the number of birds of this variety. The Biological Survey informs us that there can be no doubt that the robin outnumbers every other kind of bird in North America; and I for one believe this. I have watched millions of robins congregated in the swamps of the South, and their hour-upon-hour passage from one swamp to another. Since in practically every community of the middle and northern latitudes as well, the robin is the commonest visitor, we must conclude that the census report concerning him is accurate.

In many localities applications have been made by market gardeners and by just plain householding gardeners to the game wardens for permission to shoot depredating robins. There is no doubt that many of the birds are killed by outraged fruit-growers. But after all it is a pity. Without considering its aesthetic value, the bird does more good than harm in the world. Although his favorite animal food appears to be the humble and useful earthworm, yet he also destroys myriads of harmful insects. If, too, he cheerfully and gluttonously eats our strawberries and cherries, and deliberately trains his children to follow the same habits, shall we shoot him? In answering this I always think of what a friend of mine told me after he had killed a trumpeter swan. I asked him whether he had enjoyed the sport of the experience.

"I can't say that I did," he replied. "You see, I felt just as if I were shooting an angel."

Killing a robin is hardly that; but there is something wrong about killing any song-bird. And before doing so I think we should diligently inquire whether the death of the bird is the only insurance against the safety of our small-fruit crop.

Now, I shall not mention the best-known of the preventive measures, nor the wire cages to cover beds of Strawberries; for these forms of protection are known to all gardeners. But there are one or two kinds of berry-and cherry-insurance to which I should like to call attention. The first of these is the metal or glass whirler.

As is well-known, small birds fear shadows; for shadows warn them of approaching enemies from the air. Nothing startles a bird more than a swift-moving shadow. Now, it matters little whether the shadow be of the standard brown color, or whether it be bright and glinting; the effect is the same; the bird gets a nervous chill, and flies incontinently away. This fundamental fear is especially strong in the robin. It should be made use of by the gardener—and in the following manner. Take a long pole three feet higher than the Cherry-tree in question. Take a three-foot crosspiece at the top. From this, at six-inch intervals, suspend thin strips of bright tin or of glass blackened on one side (the broken parts of an old mirror will do). Suspend the strips on strong cord, seeing to it that they will revolve freely. When the whirler has been made, elevate it against the trunk of the tree, and tie in place. All day long, with the slightest wind moving, the bright strips will dash glinting lights and shadows on the tree and on the near-by ground; and most robins will keep away.

There is another method of protection, simpler and certainly most effective, which also has something humorous about it. The arch-fear of a robin's blithe existence is dread of a blacksnake. This fear is positively of the panic variety. Now, if you will manufacture a blacksnake or two out of an old section of hose or anything else that answers, and expose these reptiles in a Cherry-tree as if they were sunning themselves there in ambush for robins, the effect on visiting marauders will be exceedingly chastening. It is a fact that a four-foot piece of garden-hose, too worthless to do aught but to imitate a blacksnake, can save the crop of a Cherry-tree!

When, therefore, a few simple devices will enable us to save at least the greater part of our small-fruit crop, we gardeners have no real excuse for resorting to bloodshed.—Archibald Rutledge, *Mercersburg, Pa.*

Fill Your Empty Window Boxes

To the Editor of The Garden Magazine:

LAST fall the Civic Department of the Woman's Club in our city made an appeal to the residents to help beautify the place by filling "those drab, empty, useless looking window boxes" for the winter. Many responded, and the effect was so pleasing that the idea is worthy of being extensively advocated.

In the woods in this locality are many shrubs and berries available for this winter box garden—Pine branches, small Fir trees, Bittersweet, Rose hips, northern Holly, but perhaps the most striking color effect is obtained by the use of fruit spikes of Sumac.—Mary Rutner, *Traverse City, Mich.*

When Drought Makes Flowers

To the Editor of The Garden Magazine:

THE horticulturists who so emphatically proclaim in standard literature that the Crape Myrtle is a shrub that requires no special soil situation or conditions, are erroneous in their statements.

Twelve years ago I set an even half dozen Crape Myrtle shrubs on the south side of my house all in a straight line. They were equally divided—two white, two pink, two deep pink. The first year three of them began to bloom and have been blooming regularly every year since. The other three have made just as thrifty growth as those that bloomed, but during the twelve years have never even set flower buds.

Every year I have made an effort to solve the problem of the indolent habit of these three should-be flowering shrubs, and the more I studied them, the more complex seemed the problem. I was almost ready to say that there were certain species of the Crape Myrtle which were non-flowering. Half-way down the side of the house is a hose connection which has had a leaky joint. This has let water drip constantly, but not enough to more than keep the soil good and moist. Instead of having the pipe repaired, I took advantage of the situation and planted a bed of Peppermint; three kinds of Basket Willow; three of Cyperus, or the true Sedges; Calamus, and a double flowered Althea. All of these have thrived, including the Crape Myrtles, except that the latter have stubbornly refused to bloom.

Last winter the leak became greater and I had a plumber repair the pipe, thus cutting off the additional supply of moisture with the result that the lower half of the soil became as dry as the upper half of the plot. This summer, to my great surprise, every Crape Myrtle bush bloomed profusely!

This has clearly proved to me that the trouble was due entirely to the dampness. While the water was just sufficient to be a benefit to the other plants and shrubs growing in the same soil, yet it was enough to interfere with the setting of flower buds on the Crape Myrtles, which demand above all a well drained soil. The three other shrubs which have been blooming so profusely for the last twelve years are growing on the upper grade where the soil is well drained and this experience has taught me never to set Crape Myrtle in a wet or poorly drained soil.—Robert S. Walker, *Chattanooga, Tenn.*

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TO COMMUTERS

A Personal Message from Henry Hicks

Hicks Nurseries has issued a special edition of Home Landscapes just for you. It tells you how to make the most out of your suburban home; how to screen your house from the street; about foundation plantings; the flower garden; screening the garage; what trees will grow the quickest and thrive best in your locality; what shrubs to plant to bring the birds to your home; best trees for shade, and many other planting facts the Commuter ought to know.

We are reducing the prices from 25% to 40% on many items that have taken us from 15 to 25 years to grow. We grew these specially for our discriminating clientele and this cut of prices is an opportunity for you to get the best that can be grown in trees and shrubs at the most satisfactory prices. Of course they are guaranteed to grow satisfactorily.

November is a month when you can learn gardening, enjoy gardening and teach gardening. Look around your grounds to-day and decide what you need in the way of Pine, Holly, Fir, Laurel, Hemlock, or White Birch. Decide whether you wish to screen your place from the street; or whether you want additional fruit trees. Then come to the Hicks Nurseries and have the satisfaction of picking out your own trees and shrubs. At the Nursery we can show you a rock garden and a winter garden at our office which can give you some new ideas. In this are growing wintergreen, cotoneaster, arbutus, and other cover plants, yellow azalea, which makes sweeps of color under your windows; bright berried shrubs that give color to the winter garden and feed the birds until Spring returns, evergreens to make the garden beautiful all winter. In the middle Atlantic states garden planting is practical for nine months in the year, and November is one of the best of these, inasmuch as we can give your order special attention at this time.

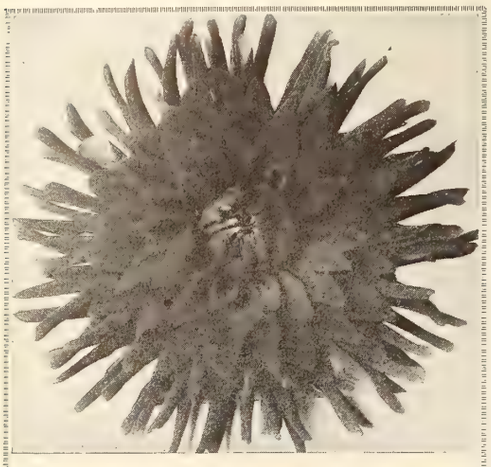
The moving of really large trees, such as oaks, lindens and maples from 25 to 40 feet high is a science. November is a most timely opportunity in view of our supply of machinery and trained men to do this sort of work. Prices on these large trees are lower than in pre-war times.

We shall be glad to send you any of our booklets which will be of interest to you, but we hope you will be sure to ask for the Commuter's Edition of Home Landscapes.

If you love a plant, you can make it live at any time.

(*signed*) ***HENRY HICKS.***

HICKS NURSERIES
Westbury Long Island, New York



A Good Dahlia Need Not Be Expensive!

The one great lesson which the last great Dahlia Show held for all of us is that some of the inexpensive varieties are just as beautiful as those valued at from $5 to $25, according to rarity. Few kinds, regardless to type, surpass such old standards as "Bianca." What finer Cactus Dahlia does any one want than "Ignea," shown above. Yet both varieties cost but $1.00 each. Whether you are a Dahlia fan now or intend to become one,

Let Me Mail You My Catalogue

You will find it a comprehensive index to all the best in Dahliadom. The reliable old stand-bys are given just as much of a show in this book as the expensive novelties. Now, while recent shows are still fresh in your mind, is a good time to write me about your plans for your next season Dahlia garden. If your name is not on my mailing list, be sure to write for the catalogue to-day.

J. K. ALEXANDER
The World's Largest Dahlia Grower
27-29 Central Street
East Bridgewater, Mass. **"The Dahlia King"**

The Glen Road Iris Gardens

Shipping season now closed; orders can be entered for 1922. Revised catalogue out Feb. 1st.

Grace Sturtevant, Prop.
Wellesley Farms, - - Mass.

A Rockery's Enduring Charm

Not only does a rock garden offer the ideal location for many quaint and curious plants, but the plants themselves bring constant and ever-changing surprises. Nor need your grounds be spacious to hold a rock garden. A small corner, plenty of rocks, a little soil and some plants combined will make you the cutest garden imaginable.

You Can Always Start with Pot Grown Plants

From the very beginning, this nursery has made a specialty of rock garden plants and we grow a greater variety in greater quantities, perhaps, than any other establishment in the East. Many of the plants are available grown in pots. This makes it possible for you to start at any time. Firmly established root system will prevent any shock to the plant. Just prepare your ground and set them—they will never stop growing.

Fall Catalogue Free

We have prepared a condensed list of Perennials particularly suitable for Fall planting. Gladly sent free on request. Please mention GARDEN MAGAZINE.

PALISADES NURSERIES **Sparkill, N. Y.**

You, Too, Can Have a Garden This Winter!

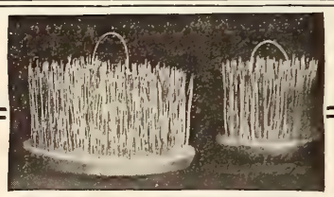
Think of the pleasure and the saving in having fresh vegetables and flowers this winter—grown in your own greenhouse. Why not?

CALLAHAN SECTIONAL GREENHOUSES

are built in easy-to-handle-sections of finest cypress. Quickly erected. Several sizes and styles. Cost surprisingly low. Permanent, practical, handsome. Used on the finest estates.

Write for new catalogue at once. Our service is to help you select the proper house and get the most out of it. There is still time to have a garden this winter.

T. J. CALLAHAN CO.,
31 So. Canal St., Dayton, Ohio.



HAND MADE FLOWER HOLDERS

No Flowers Too Delicate, No Stems Too Long

Just the thing to double the life of your cut flowers. These holders are unique, but pronounced by professional and amateur alike as absolutely practical.

Prices $1.50—$8.00 each according to size.

Odd sizes and shapes easily made to order. Guaranteed to last for many years. Used at Seventh International Flower Show, the exhibit winning First Prize.

WALTER S. DANIELS, 872 Lexington Ave., New York City

Holland Bulbs

Write to us for prices on Tulips, Hyacinths and other Bulbs for Fall planting.

Edward T. Bromfield Seed Co.

GARDEN CITY ~ NEW YORK

IRON AGE

Farm, Garden and Orchard Tools
SEND FOR BOOKLETS
BATEMAN and COMPANIES, Inc., Grenloch, N. J.

ANDORRA

ANDORRA NURSERIES Chestnut Hill, Pa.

Ornamentals exclusively, distinctive in quality and variety, for street, park and all civic planting
We cater to the most discriminating trade.

Have you seen ANDORRA?

Fall Planting of Flowering Crabs

(MALUSES)

The Flowering Crabs may be planted with best results now until the ground is frozen. One of the show events at the Arnold Arboretum is the blooming of the Flowering Crabs followed by showy fruit. They are among the most gorgeous of spring flowering trees and shrubs.

They are of easy culture, and whether planted singly or in masses give remarkable and quick results. While beautiful on the small lawn, Flowering Crabs are used to the greatest advantage on a large scale in woodland and other mass plantings, as are Dogwoods and Hawthorns. No group of plants have greater value than the Maluses for enlivening open forest parks and country roadside; they present striking effects when planted on parking strips of boulevards or wide city streets.

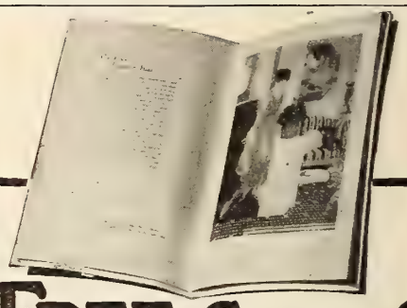
BOXFORD-HIGHLANDS NURSERY, EAST BOXFORD, MASS., has eighteen of the finest varieties from the Arnold Arboretum, many not heretofore available in the trade. Orders should be placed at once. Prices on request.

Send all orders and letters direct to

HARLAN P. KELSEY, *Owner*
SALEM MASSACHUSETTS

Irises, Peonies, Gladioli

IMPORTERS AND GROWERS OF CHOICE VARIETIES
Send for our free illustrated catalogue
RAINBOW GARDENS
701-2 Commerce Bldg. ST. PAUL, MINN.



FREE Copy of Home Suggestion BOOK

Practical ideas for home service and decoration in drawing rooms, halls, sun porches, bathrooms, dining rooms, kitchens and all parts of the house.

Helpful ideas for the use of Tiles, with illustrations showing how to add to the attractiveness of home interiors. Sent free on request by

THE ASSOCIATED TILE MFRS.
1250 Seventh Avenue, Beaver Falls, Pa.

PERGOLA NO. 225

Catalogue Free

ROSE OR VINE LADDER NO. 203

For Veranda or to stand any suitable place.
Ornamental design. F.O.B. factory.

18 in. wide, 4 ft. high	$3.50
18 in. wide, 5 ft. high	3.75
24 in. wide, 6 ft. high	4.25
24 in. wide, 7 ft. high	4.70
24 in. wide, 8 ft. high	5.25
24 in. wide, 9 ft. high	6.00

Sufficient white paint furnished for 3 coats.

A useful ornament suitable for most elaborate yard or garden. Well made. Immediate shipment.

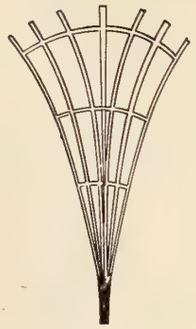
Beautify Your Home Surroundings

Nothing adds more to the beauty of a yard or garden than the addition of pergolas, arbors, trellises and fancy lattice fences. We manufacture them in a large variety of sizes and designs.

Without obligation, our experts will offer you suggestions with sketches and prices if you will give us an idea of the present lay-out of your grounds.

Garden Craft Dept.,
EXPRESS BODY CORPORATION
Crystal Lake, Illinois

Catalogue Free



TRELLIS NO. 201

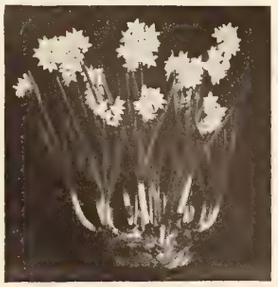
Fine to support small vines, roses, etc. Made of hardwood, fan shape.
Sent Post Paid to any place in the U. S. if cash with order.

18 inches high	55c
24 inches high	60c
36 inches high	80c
48 inches high	$1.00
60 inches high	2.00
72 inches high	2.25

Remember we deliver this to your door. No charges to pay.

ARBOR NO. 200

"In Flowers I Me Delighte" Let Us Help You



To have flowers all through the dreary winter days—flowers to grace your home with light and fragrance. Delight your friends with the most welcome winter gift—a bowl or pot of fragrant blossoms. Think of the smile you may bring to the life of some weary invalid.

Plant NOW, NOW, NOW

To Flower for Christmas and New Year

Special November offers for *Holiday Bloom*. $1.00 Collection postpaid to your home (East of the Rockies. West add 15c).

3 Paper White Narcissi, crystal white clusters.
1 Soleil d'Or—Clusters of dazzling yell w.
1 Chinese Sacred Lily—a profusion of white flowers with yellow cups.
2 Double Roman Narcissi—Fragrant white with golden cups.
9 Early French Jacinths, enchanting blossoms, white-rose-azure.

$2.00 Collection

5 Paper White Narcissi — 1 Chinese Narcissus "Flower of the Gods"
3 Soleil d'Or — 2 Roman Narcissi
5 Early French Jacinths

In Specially Prepared Moss Fibre

These bulbs bloom quickly and freely. Eliminates messing with soil, etc. Our Fall Bulb Book tells you all about this Moss Fibre, with directions for use, etc. If you have not received it, send for a copy.

Lily of the Valley
The Most Fragrant Flower for Xmas Morn

20 P ps, $2.25 — 50 Pips, $5.00

Free Delivery with Moss Fibre to Plant and Full Directions.
These pips are sent out just in time to flower for Xmas. The most enchanting flower for a Christmas gift. Planted in our specially prepared Moss Fibre they bloom in 16-20 days.

If you want "Joy in Every Bulb" write

H. H. Berger & Co.
70 Warren Street — New York City

HODGSON *Portable* HOUSES

ONE of the biggest advantages of a Hodgson Portable House is that you can take it down just as quickly and easily as you can put it up.

It is a mighty fine thing, for instance, to know that your garage can be moved whenever and wherever you want. If you own a hunting lodge you can move it with no trouble at all—if it is a Hodgson Portable House. In fact no matter what kind of a portable building you want, a Hodgson House is the quickest and easiest to enlarge, put up and take down.

In addition to this every Hodgson Portable House is finely proportioned, sturdy and substantial, always in keeping with its surroundings.

Our illustrated catalog, sent at your request, describes the many kinds of Hodgson Houses.

E. F. HODGSON CO.
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PLANT NOW

PEONIES of the FAMOUS CHERRY HILL STRAIN, KNOWN the WORLD OVER for THEIR QUALITY, HARDINESS, VIGOR and FREE BLOOMING QUALITIES.

T. C. THURLOW'S SONS, Inc.
(Cherry Hill Nurseries)

Catalogue — West Newbury, Mass.

Farr's Lovely Lilacs

Many new varieties at Wyomissing, originated by the famous French producer, M. Lemoine, bloom more freely and produce much larger trusses than the older types. Lilacs should be planted this month; in early spring you will be rewarded with blooms and fragrance not surpassed by any other shrubs.

Philadelphus and Deutzias These French Hybrids (originated by M. Lemoine) are particularly attractive because of their extra large flowers and delicate colorings. October and early November are the ideal times for planting.

Farr's Hardy Plant Specialties

(seventh edition, 1920) is a book of over a hundred pages, with illustrations of Lilacs in natural color, and other photographic reproductions. Too costly for miscellaneous distribution, but a copy will be sent on receipt of $1, which sum will be deducted from your first order amounting to $10.

Bertrand H. Farr, Wyomissing Nurseries Co. 104 Garfield Ave., Wyomissing, Penna.

HOME ATTRACTIONS

Suitable and Suggestive for Beautifying Home Grounds with

Pergolas, Rose Arbors, Lattice Fences, Garden Houses and Garden Accessories

Our illustrated catalogue contains just the things required to lend cheer and pleasure to the surroundings of home.

(When writing enclose 10c and ask for catalogue "H-33.")

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Do You Know the Name of this Odd Flower?

Many Californians will recognize this bloom, and some garden enthusiasts in the Eastern and Central States may know its name. It is "Fairy Lantern," one of the novelties shown in my catalogue of **"California Bulbs,"** which shows others even more attractive.

My catalogue of **"Perennial Plants"** contains the standard Irises and Peonies, together with many other hardy plants that are almost unknown except on the Pacific Coast. You'll appreciate the opportunity to surprise your friends and obtain new garden thrills.

I'll mail *either or both of these catalogues* if you send your name.

CARL PURDY Box 90 Ukiah, California

ROSES

FAIRFAX ROSES are widely known for their exquisite beauty, deep fragrance of delicate refinement—and long life.

Fairfax Rose plants are nurtured under natural conditions—outdoors—wintered, and acclimated to all climates; tough canes and vigorous roots impart a hardiness to Fairfax plants which assures thriving growth anywhere, and a full, free and *beauteous bloom the first season.*

New Fairfax Rose Book Free

Send for new Rose-Book, containing beautiful illustrations and descriptions of roses—ROYAL ROSES OF PURITY AND BEAUTY—with valuable facts on growing roses.

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Have You Ever Used Gilson Garden Tools?

If you have, you know there's nothing like them for reducing the hard work of gardening and keeping your garden free from weeds.

If you ***haven't,*** don't wait until gardening time comes, but write us at once for our Booklet "Bigger Crops through Cultivation" which shows you why Gilson Garden Tools are a delight to amateur and commercial gardeners everywhere.

J. E. GILSON CO.

100 Valley Street, Port Washington, Wis.

Moss Aztec Pottery

Offers a wide choice of objects, from simple fern dishes and bud vases to impressive jardinieres and plant stands. Its predominating characteristic is refined elegance in designs and colors. A post card request will bring you the "Moss Aztec" catalogue and name of nearest dealer.

ZANE POTTERY COMPANY
So. Zanesville, O.

The Perfect Mulch

Experts agree that Fall transplanted shrubs, trees, bulbs, etc., are much surer to thrive next Spring if properly mulched. The trouble with most mulch ordinarily used is that it carries many weed seeds and insect pests. You need not fear that this will happen if you use our

Cut TOBACCO Stems

Specially Prepared

Conceded to be the ideal mulch by all who have used it. Combines frost protection and fertilizing qualities in extraordinary degree. Easily handled. Will not burn the plants, keep away ants, moles, worms, etc. Moreover it assures you

Finer Lawns at $2.00 per 200 Square Feet

One hundred pounds of Cut Tobacco Stems costing $2 will cover a space size 10 by 20 feet. Try it as an experiment on part of your lawn. Cover other parts with ordinary mulch. Note the difference and become acquainted with the superior quality of our products.

Write to-day for special leaflet explaning the value of our products to gardening either indoors or out.

Lancaster Tobacco Products Co.

Lancaster Box 2182 Pennsylvania

BOLLES DAHLIAS

Bolles Dahlia Brochures *(Illustrated)*

WRITTEN by an American Grower for American amateurs and professionals, for American conditions of climate, soils, and markets. Beautifully illustrated. Now on the press. Every dahlia lover, enthusiast, whether growing for joy, exhibition, or commercially, needs these booklets.

Titles include History; Cultivation (including location and soil); Propagation; Fertilizers and Forcing; Cut Flowers; Commercial Growing and Sales; Breeding New Varieties; Enemies; Harvesting and Storage; etc.

Twenty-five cents each. The brochure on Harvesting and Storage is ready for distribution. It may save your crop of tubers.

My 1922 Dahlia Catalogue ready January First

CHARLTON BURGESS BOLLES

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Beautiful Views in the Nation's Capitol City

Real snappy snapshots; 4 x 5, Mt. Vernon, White House, etc. 6 for 50c.; 14 for $1.00; sample 10c. 8 x 10 enlargement Capitol Reflections, colored and framed $6.75. Retails $8.00 to $10.00.

Carl Leighton

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EVERGREENS

Rosedale Evergreens, due to frequent transplanting, have unusually sturdy root systems. We are equipped to meet your every planting need. Write for free catalogue.

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"The Home of Well-Grown Evergreens"

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Green's Ornamentals

—A Success for 40 Years

They have in them 40 years of tree-growing experience

Shade Trees, Flowering Shrubs, Vines for the large estate or city lot.

Apple, Pear, Peach, Cherry and Nut Trees grown from whole roots. Exceptional variety of Berry Bushes and Vines.

SYRACUSE is a double size raspberry of highest flavor. Other new fruits—Caco Grape, Honey-sweet Black Raspberry, Rochester Peach.

FREE 64-PAGE CATALOGUE is a real text book on growing things.

No salesmen—buy direct to save money.

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Pulverized Sheep Manure

Best for Lawns and Gardens

NATURE'S OWN PLANT FOOD

Great for Lawns, Grass Plots, etc. Apply it in the fall. It affords the fullest advantage of fall rains and fall growing period, insuring an early start in the spring and a luxuriant growth.

SHEEP'S BRAND HEAD TRADE MARK NATURAL GUANO CO. AURORA, ILLINOIS

Sheep's Head Brand also is used extensively for Gardens, Small Fruits, Shrubbery, etc. Rich in nitrogen, phosphoric acid and potash; also adds humus. Guaranteed absolutely clean—nothing but sheep manure—free from weed seeds which are killed by heat. Dried and pulverized for easy application. Circular and prices on request.

NATURAL GUANO CO., 803 River Street Aurora, Ill.

The World's Most Select
DAHLIAS

Since the vast number of varieties of good Dahlias available is bewildering indeed to both amateur and connoisseur alike, I have taken, as we say, the bull by the horns and have arbitrarily established a collection of the best. In making my selection I have not been governed by personal likes and dislikes. Rather have I made the rule to select varieties that have given the greatest degree of satisfaction in all parts of the country and for the experienced and new grower alike.

New Catalogue Soon Ready

Soon after the first of the year my new catalogue, the title of which is given in the first headline of this announcement, will be ready for distribution. You will find it a concise book, introducing to you all the best, recognized as such, in Dahliadom to-day.

If it is not my pleasure as yet to have you on my mailing list, I would appreciate it as a great privilege to hear from you now, while your interest in Dahlias is still active.

C. LOUIS ALLING
Dahlia Specialist
251 Court St. West Haven, Conn.

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Largest importers and growers of
ORCHIDS in the United States
Send twenty-five cents for catalogue. This amount will be refunded on your first order.
LAGER & HURRELL
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SUNDIALS

Real Bronze Colonial Designs
From $4.50 Up
Memorial Tablets
Also other garden requisites
Manufactured by
The M. D. JONES CO.
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DREER'S
Hardy Perennial Phlox

may be planted any time before the ground freezes.

Dreer's Autumn Catalogue

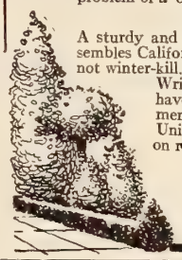
offers a very select list of varieties which includes the most desirable colors. They succeed in almost any soil and position and flower for a long time; and they will continue growing and flower freely for many years. The catalogue also gives a complete list of seasonable Seeds, Plants and Bulbs for outdoor Fall planting, and includes many plants suitable for growing in the Window Garden and Conservatory.

A copy of Dreer's Autumn Catalogue will be mailed free to any one mentioning this magazine.

HENRY A. DREER
714-16 Chestnut St., Philadelphia, Pa.

Two new hardy hedge plants now ready for you
Box-Barberry

For beauty, symmetry and endurance. It solves the problem of a dependable edging or low border hedge.



IBOLIUM PRIVET

A sturdy and dependable plant for larger hedges, resembles California Privet, but much hardier and does not winter-kill.

Write us concerning your further needs. We have two hundred acres of as fine ornamental nursery stock as can be found in the United States. Fall planting Booklet sent on request.

The Elm City Nursery Co.
Woodmont Nurseries, Inc.
Box 191 New Haven, Conn.
Near Yale Bowl

100 DARWIN TULIPS
$3.50 Postpaid

Graceful and artistic. Undoubtedly the most popular of all Spring flowering bulbs.

A select assortment including all the most desirable varieties.

A Helpful Bulb Catalogue Free

Seedsmen Main Street **Bassi Frères** de Paris Inc. New Rochelle New York

Your Home

deserves to be set to beautiful trees and plants. Write for free Catalogue describing Progress Stock in the making.

THE PROGRESS NURSERIES
1313 Peters Avenue Troy, Ohio

Garry-nee-Dule Perennials

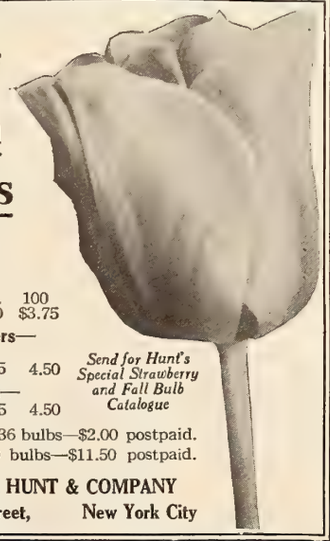
DO you know what fun it is to grow your own hardy plants from seed? It is great sport to watch the tiny seedlings break through the ground and develop into plants, unfold flowers. I know because I raise hundreds of thousands of them and they never fail to fascinate me. Here are a few choice things that I can recommend, seeds gathered by me this year.

Garry-nee-Dule strain of White Hybrid Delphiniums, per pkt. 50c. Blue Hybrid Delphiniums, my own selection, per pkt. 25c. Rudbeckia triloba. A charming yellow *biennial* that flowers the last of August and all through September. Rarely offered for sale. Per pkt. 25c.

Please ask for our illustrated catalogue "Hardy Plants for the Home Garden." Gladly mailed free. Let's get acquainted.

W. A. TOOLE
Garry-nee-Dule **Baraboo, Wis.**

Special Offer of
Darwin Tulips



	Doz.	100
Clara Butt—Soft salmon rose	$ .60	$3.75
Farncombe Sanders—Scarlet, with white base	.75	4.50
Pride of Haarlem—Old rose	.75	4.50

Send for Hunt's Special Strawberry and Fall Bulb Catalogue

1 dozen of each—36 bulbs—$2.00 postpaid.
100 of each—300 bulbs—$11.50 postpaid.

WILLIAM M. HUNT & COMPANY
148 Chambers Street, New York City

"LA GLOIRE"
A SUPERB NEW DAHLIA

Soft salmon decorative, glistening with powdered gold. Stock very limited. We are booking orders at $10.00 a bulb. Other new introductions of superlative merit:

Roxana—cactus—capucine yellow,	**$2.50**
Mrs. A. C. James—Cactus, amber,	**2.50**
Seawanhaka—Decorative, crimson,	**1.50**
Imogene—Decorative, mallow pink,	**1.50**

Did you see our exhibit at the recent show of the American Dahlia Society at Hotel Pennsylvania. It included some of our latest seedlings together with the best of the California and other American productions. If you want to talk "Dahlia," we would like to hear from you. Be sure to write for our catalogue.

HUNTINGTON DAHLIA GARDENS
Huntington New York

For Autumn Planting

Rhododendron Maximum. In car lot.
Rhododendron Catawbiense. In car lot.
Rhododendron Carolinianum. In car lot.
Kalmia Latifolia. In car lot.
Fruit Trees and Fruit Plants.
Ornamental Trees and Shrubs.

Send list of wants for price

THE MORRIS NURSERY CO.
1133 Broadway, New York, N. Y.

Movilla Peonies

Awarded Gold and Silver Medals by
American Peony Society

New York — Philadelphia	Reading
1916 1917	1920

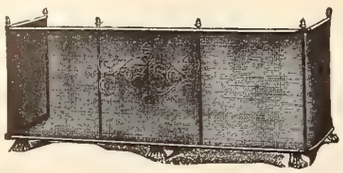
¶ We give our entire time and attention to cultivating the *best.*

¶ We waste no effort or expense growing inferior varieties.

¶ We have all the newest and best American and European Introductions.

¶ Send 30 cents for descriptive catalogue with symposium ratings or send a postal card for free price list.

Movilla Gardens
Haverford, Pa.



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"BUFFALO" FIRE FENDERS, SPARK GUARDS and FIRE PLACE SCREENS are unusually distinctive in appearance. Their good and correct designs, their well placed ornamentation, and their attractive finish lend charm to the most perfectly appointed residence. They insure perfect safety from flying sparks and absolute protection to children and older members of the household.

"BUFFALO" FIRE FENDERS, SPARK GUARDS and FIRE PLACE SCREENS cannot be compared with flimsy, cheap ones. They are strong and durable, and made by the most skillful workmen from the best "BUFFALO" quality of fine mesh wire cloth. We make them to fit any size fire place opening and in any desired ornamentation or finish.

We also make "BUFFALO" PORTABLE FENCING SYSTEM, VINE TRAINERS, TREE GUARDS, GARDEN FURNITURE and WINDOW GUARDS, etc. Information gladly furnished.

Write for complete catalogue No. 8BF. Mailed upon receipt of 10c postage.

BUFFALO WIRE WORKS CO., Inc.
(Formerly Scheeler's Sons)
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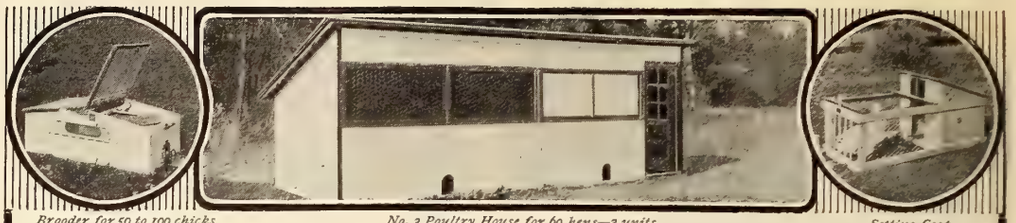

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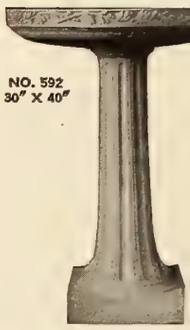

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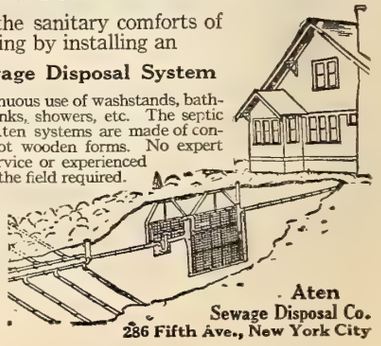

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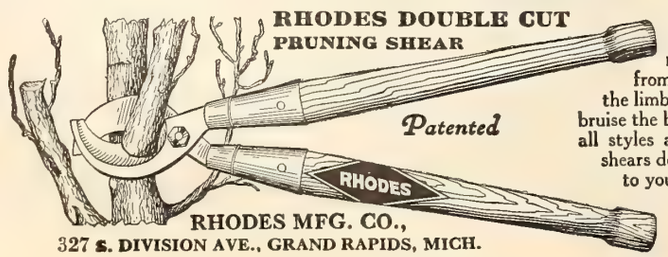

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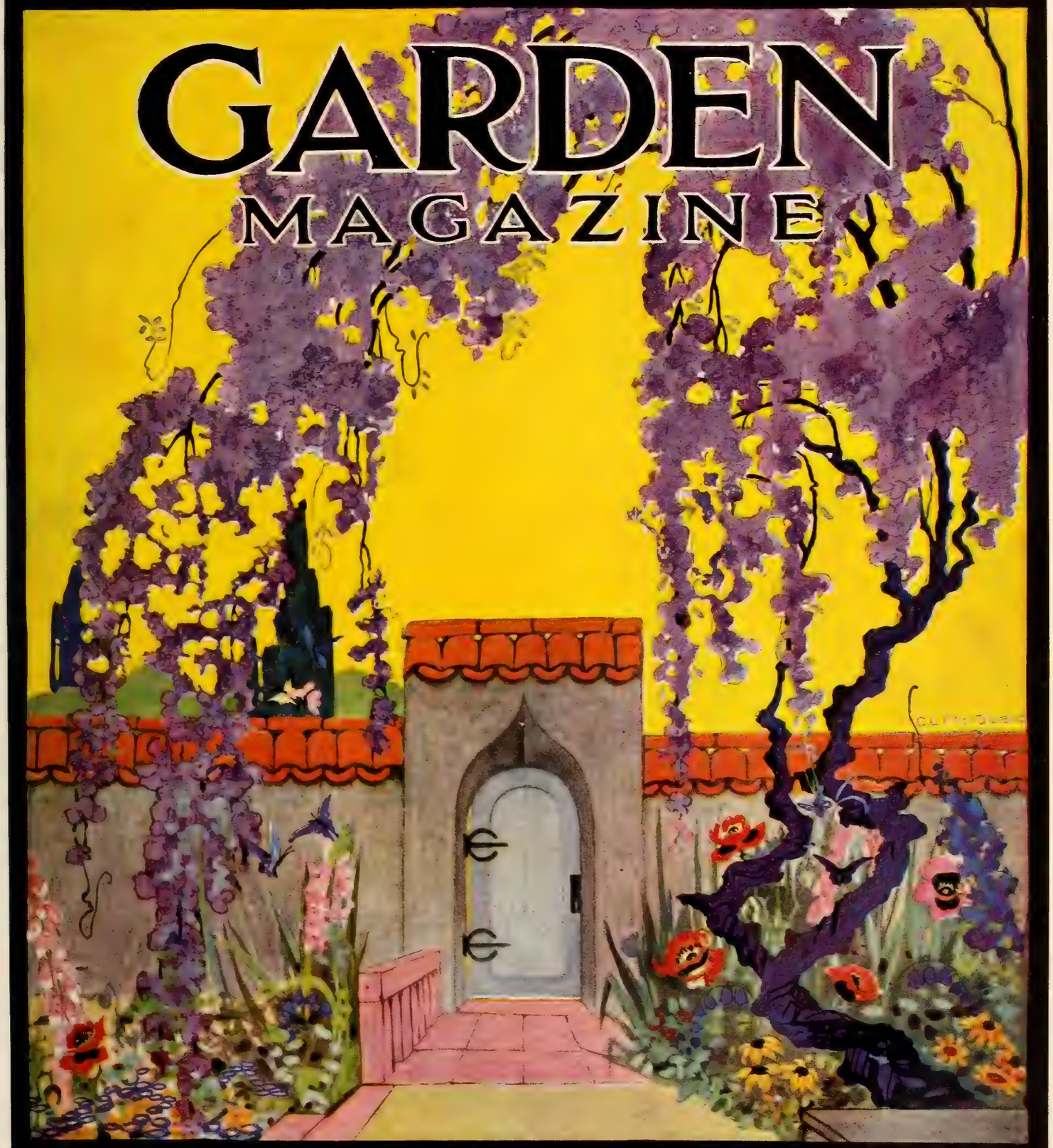

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Dahlia Specialist

Westerly Box C-22 Rhode Island

DECEMBER, 1921

THE GARDEN MAGAZINE

CONTENTS

COVER DESIGN: SAN JUAN BAUTISTA MISSION GATE — *C. L. McQuaid*

PAGE

EUCALYPTUS AS AN ACCENT POINT - - - - - - - - - 173
Photograph by Gabriel Moulin

TREE FERNS - 174
Photograph by Gabriel Moulin

"THE OLD MILL" - - - - - - - - - - - - - - - - - 175
Photograph by Bransor M. DeCou

THE MONTH'S REMINDER: WHEN TO DO WHAT YOU WANT TO DO - - - - - - - - - - - - - - - - - 176

CONTINUOUS BLOOM FOR THE CALIFORNIA GARDEN — *Albert R. Gould* 177

WHEN AN EASTERNER GARDENS IN THE GOLDEN WEST — *Helen S. Thorne* 178
Photographs supplied by the author

SHORE LINE GARDENS OF THE PACIFIC - *Mark Daniels* 181
Photographs by Gabriel Moulin and F. M. Frary

PLANTING CHARTS FOR THE WESTERN GARDEN — *Thos. J. Steed* 185
I. Annual Flowers from Seed
II. The Home Vegetable Plot

THE HOUSE THAT WAS BUILT FOR A GARDEN — *Arthur W. Colton* 187
I. "Havenwood" Home of Mr. E. L. Ryerson
Photographs supplied by H. V. D. Shaw

FOR THE GARDENER'S CHRISTMAS - - - - - - - - - - 190
Photographs supplied by The Gorham Co., Copenhagen Royal Porcelain and Danish Arts Inc., J. E. Caldwell & Co., and others

WHAT AMERICA HAS DONE FOR THE DAHLIA *J. B. S. Norton* 192
I. Early Days and the Pioneers
II. The Dahlia's Apotheosis in the Sunset State — *Elizabeth Lymbery*
Photographs supplied by Branson M. De Cou, Walter Miller, and others

THE GARDEN BEAUTIFUL WITHIN PRISON WALLS - - - 197

PICTURESQUE VALUES OF EUCALYPTUS *Allison M. Woodman* 199
Photographs supplied by the author

THE GARDENS AT "REBEL RIDGE" - - - - - - - - - - 202
Photographs by Harry G. Healy

SPANISH BORDER FOR CALIFORNIA GARDENS — *Sydney B. Mitchell* 204

MY LOS ANGELES SUBURBAN GARDEN - - - *W. J. Ghent* 206
Photographs by the Graham Photo Co,

AMONG OUR GARDEN NEIGHBORS - - - - - - - - - - 208

THE OPEN COLUMN - - - - - - - - - - - - - - - - - 209

LEONARD BARRON, Editor

VOLUME XXXIV, No. 4

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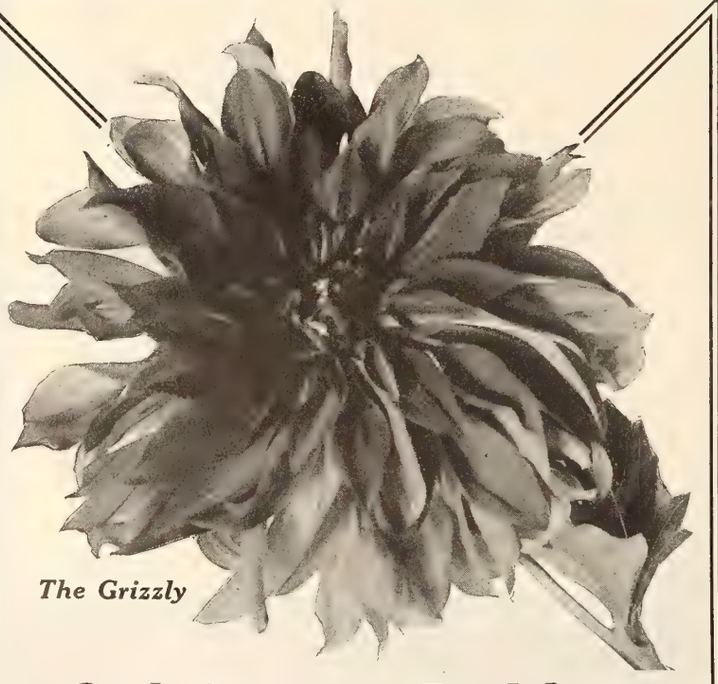

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The Garden MAGAZINE

Vol. XXXIV, No. 4 — December, 1921

Gabriel Moulin, Photo.

"O SHAKEN FLOWERS, O SHIMMERING TREES,
O SUNLIT WHITE AND BLUE"

Sara Teasdale

The subduing green of gardens has a more than ordinary value in California with its many white dwellings and blazing blue sky; slender, columnar trees like the Monterey Cyprus and rapidly tall growing Eucalyptus lend character and accent

Gabriel Moulin, Photo.

"THE TREES WERE FEATHERED LIKE BIRDS"
Josephine Preston Peabody

Charmingly fairy-like in aspect is this bit of cool seclusion peopled by Tree-ferns and their humbler cousins of the ground. The Tree-fern, a member of the Cyatheaceae family and primarily a forest dweller, finds favorable conditions on the seaward side of the Pacific Coast ranges reached by moisture-laden winds from the ocean. The height of the trunk, or caudex, varies from three to forty feet

Branson M. DeCou, Photo.

"GLORIOUS LANDS WITH GLITTERING SANDS UPON THEM,
WITH SOILS OF GOLD AND MAGIC MOULD FOR SEEDING,
THE SHINING LOAM OF LANDS AFOAM WITH GARDENS."
Ridgely Torrence

"The Old Mill" is a quaintly diverting feature of the Busch gardens at Pasadena and the whole scene, in fact, has a fascinating air of magic realism quite as if it were a stage setting for some folk or fairy tale

WHEN TO DO WHAT YOU WANT TO DO

The Month's Reminder

DECEMBER—WHEN WE TALK OVER THE YEAR'S DELIGHTS

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practice. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

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CONTINUE deciduous planting as long as the ground remains open. If large trees are to be moved with a frozen ball of earth, cover the ground about the trees with straw, or manure, to make digging easy. Clean up and burn all refuse and rubbish—fallen leaves are *not* rubbish!

Complete mulching of bulb beds, perennial borders, shrubbery, etc. as soon as the ground has frozen hard.

Irregular bumpy patches of lawn, may be given a heavy top-dressing of loam 10 parts, to one part coarse bone meal, put on an inch or more thick. Mulching the lawn with manure when it is available is good practice despite the fact that it may carry some weed seeds.

Garden refuse composted during the summer will be benefited by being turned over and re-stacked, adding a liberal dressing of lime as the work proceeds.

Newly fallen snow to be removed from frames if they are not frozen through.

Pansies, English Daisies, Forget-me-nots, Campanulas, etc. wintered in frames to be well ventilated until they freeze in for the winter. Then cover with dry leaves and replace the sash. Many of these plants will winterkill otherwise.

Pruning and Spraying

While trees are dormant strong spray solutions can be used. Get after the scale in the shrubbery border—Lilacs, Japan Quince, Persian Lilac, Roses, the entire Pyrus family, Evonymus are very susceptible. Do not spray when freezing.

Use an up-to-date sprayer, and concentrated commercial preparations ready for use by merely adding so many parts of water. Choose a quiet day, and keep on the windward side of the spray.

Proceed with pruning when the mercury is not hovering around zero.

It is all very well to thin out crowded and crossing branches in a fruit tree, but it is not intelligent pruning when the same rule is applied to a plantation of shrubbery containing plants with highly colored bark, the purpose of which was to create winter effects. Straight line pruning is not an infrequent error.

Cut back to two-thirds Roses when they are being protected for the winter. Long canes swayed and whipped about by the wind during the winter will loosen the plants in the soil.

Weak and weather beaten evergreens will be improved by judicious pruning.

Vegetables

Further protect Lettuce in frames by banking leaves and manure round the sides; mats, boards, and leaves to be placed over the sash.

Provide extra covering for Celery, and other root crops that must of necessity be stored outdoors, as colder weather sets in. Celery stored in trenches outdoors and mulched will be safe from early frosts, but with more severe weather to be removed to the cellar. One convenient way is to place an inch or two of sand in boxes (about as deep as the Celery is tall) and transfer the Celery to these, after having given a good watering.

Vegetables stored indoors to be picked over from time to time to remove bad ones, as they soon spoil the good.

Bean poles, pea brush, and stakes of all kinds to be looked over and put in shape for another season.

Trenching and Draining

Sections of the garden that could not be cleared in time for cover crops to be sown can be trenched if the ground remains open. If manure is available, first put in a liberal application. Dig as thoroughly as possible two spits deep. Start along one side of the plot, throwing the soil out. Spade up the bottom, turning it where it falls, and on top of this, after mixing in the manure, turn the top soil from the next strip—and so on.

If crops were backward in spring and the ground wet and soggy, draining is needed. This work can be done any time until the ground is too hard to dig.

Forcing

Start forcing in earnest this month. Among the first things to be started are the early Grapes, and early Peaches (pot trees respond easier than those planted in the borders). If started together, the pot trees will give ripe fruit ten days in advance.

Dark forcing may begin toward the end of the month; and is usually best accomplished under the greenhouse bench. Rhubarb, Asparagus, Mushrooms, Endive, and Sea-kale, are all forced in about the same way: the dormant roots (with the exception of Mushrooms, which are planted by spawn), being planted in a prepared bed, which is darkened by a screen of burlap or boards. With no greenhouse utilize the cellar or a hotbed.

An early batch of Strawberries can be started on shelves, with the Grapes and Peaches.

To set fruit on Tomatoes, tap the vines a couple of times during the day to cause the pollen to fly; in very dark, dull weather, it may be necessary to hand pollinate.

Cucumbers sown the last week of October to go into the fruiting pots; ten- to twelve-inch is not too large. For an early spring crop sow seeds the last week in December.

Early planted Golden Spur Narcissus should be sufficiently rooted to stand gentle forcing, also the French Trumpet Majors.

Bulbs for late forcing may still be planted.

Flower Garden

Continue to give protection to all the subjects that need it as suggested last month. Standard Roses may be laid over by loosening the roots on one side, and buried with earth.

Fruit Garden

Setting out of new trees to be completed as soon as possible now; and remember to mulch all newly planted stock.

Guard against mice and rabbits by placing protectors about the stems, sinking the bottom into the ground, before it freezes. Some good wire protectors are now available, or they may be made at home of suitable material. Many use building paper.

Surface manuring of fruit trees is of immense value. Any leafy matter in conjunction with well decayed manure may be utilized. It is seldom that fruit trees suffer from too much surface feeding.

Raspberries and Blackberries in sections where they are subject to winter killing to be loosened on one side of the roots, laid down on the ground, and covered with earth.

Inside the Greenhouse

This is the most trying of all months for plants indoors or in the greenhouse. The sun is low, with very little influence, and the days are short, which means that practically all the heat required for growing plants has to be supplied artificially. It is good practice to keep temperatures a few degrees below normal, to prevent the plants becoming soft and sappy; especially is this so during exceptionally dark weather. Ventilate freely whenever possible, and if the desired night temperature can be maintained with one of the

top ventilators slightly open so much the better. Care in watering is important. Don't have set days for doing it. Look over the plants every day, and twice if heavy firing is being done, watering only such as need it, and then do it thoroughly; "little and often" in watering is the poorest of poor practice.

Red spider, thrips, white scale, green fly, white fly, etc., delight in the dry, buoyant atmosphere produced by heavy firing, and this must be offset by frequent and thorough damping down of walks, and floor space under the benches.

Timely fumigation and syringing is not to be overlooked. Hydrocyanic acid is the only effective remedy for white fly; for fly in general use tobacco preparations.

An occasional watering with lime water, or a dusting of lime on the rose and carnation benches, will help sweeten the soil if it has become at all stagnant; but avoid lime when handling Azaleas, Heaths, and other plants of the Heath family.

Feed with some care and do not attempt to force growth by feeding. Some few plants like Callas will take feed at almost any time when growth is active, but an excess of food at a time when the plants do not show a natural tendency to grow is positively harmful.

Begonias Glorie de Lorraine and Cincinnati that are late coming into flower will stand hurrying along in a temperature of 60 degrees.

Recently potted bedding plants to be looked over carefully from time to time and overcrowding avoided. Cuttings of Geraniums and other soft-wooded bedding plants may still be made.

Gladiolus America may be planted from now until March, either directly into benches among Carnations or in pots, to be benched later. Plant every two weeks for succession.

Pot Roses may be wintered in coldframes well covered with dry leaves or salt hay.

Cuttings of Roses to be made. For "one eye cuttings," the wood is cut immediately below the bud, and another bud is left near the top to which a leaf is attached. The lower bud is inserted in the sand (which must be clean) and a wire is extended across the propagating bench on the top of each side to prevent the leaf touching the sand. Set all the cuttings one way so that a whole row can be supported by one wire.

Dead leaves to be picked from Carnation plants; cuttings may be taken.

Calendulas and Double Cornflowers sown now will flower in March; give carnation house temperature.

Start Melons, sowing winter varieties.

Stake as occasion requires tall plants such as Antirrhinum, Lilies, etc. Short stuff such as Freesias, can be supported by a few twigs in the pots or boxes. String Beans may be supported in the same manner.

Amaryllis wanted early may be started at this time. Remove a couple of inches of the old surface soil from the pots, and replace each year with a good rich mixture.

Keep Chrysanthemum stock plants cool to throw out strong cuttings.

Be careful with Sweet-peas, avoiding direct draughts, and a close stuffy atmosphere during dull weather. Do not overwater; Sweet-peas require lots of water when outdoors in spring, but not indoors in winter. Sow for April flowers.

Orchids need less overhead spraying now, but guard against dry, arid conditions with increased fire heat.

Bouvardia that has finished flowering may be cut down, placed in deep flats, and set under a carnation bench to remain dormant until April.

Propagate Carnations. Firing will be fairly steady from now on, and an even degree of bottom heat can be maintained.

Sow seeds of Vinca alba and rosea in heat to get to flowering size before planting out time.

Liliums giganteum and formosum planted in October with growths one or two inches long need a light, sunny bench in a warm house. L. giganteum may still be potted for later use.

Repot young stock of Cyclamen that needs it.

Make cuttings of evergreens.

Flowers for Christmas

Flowers for Christmas, such as Lilies, Poinsettias, Azaleas, Roses, Carnations, etc. may have a slight increase of temperature. Be careful not to overdo it, however.

Roman Hyacinths well rooted and having two inches of growth by the beginning of the month may be flowered by Christmas.

Azaleas intended for Christmas should show color by the first week in the month. A temperature of 55 degrees is best for them.

CONTINUOUS BLOOM FOR THE CALIFORNIA GARDEN

ALBERT R. GOULD

EDITOR'S NOTE:—*The writer is a practical grower of many years varied experience; and has grown annuals and perennials in California for all purposes for six years. He designed and laid out the Model English Garden of the C. C. Morse Co. Exhibit at San Francisco during the Panama Pacific International Exposition (1915) which won the highest awards and was himself awarded a Gold Medal for successfully maintaining a successional display from February to December.*

THE chief aim of most garden lovers is a successional display of bloom without lapse, and by real planning, sowings and plantings may be so arranged in California as to achieve this object, both for the border and cut flower garden. Detailed cultural directions here given should prove helpful since the advice is based on experience in several sections of the state.

CULTURAL HINTS ON RAISING FROM SEED

As a start a finely prepared seed bed is essential and may be made up of leaf soil, peat, garden loam, and sand, such as beach sand. These elements, well mixed, will provide an excellent medium in which to raise seed the whole season. It is a good plan to make a shallow frame nine inches deep and three feet wide, the length being governed by the quantity of seedlings required. Above this may be erected a framework on which may be placed lath covers made to fit, and removable; and these will help to protect the young seedlings from the sun which will otherwise burn them.

When the seedlings are well through the ground and making their second leaves they may be transplanted in other beds prepared in a similar manner and the seedlings must be placed two or three inches apart and kept shaded for a week or ten days at least.

Naturally some subjects will germinate quicker than others and also require transplanting earlier. Most of the annuals behave thus and for that reason it is better to sow all the annuals together, and make another bed for the perennials. It is necessary to sow the seed very thinly as over-crowding in the seed lines causes damping off. Watering is also an important factor, and while the bed appears moist water should not be given. The practice of giving so much water every day or on alternate days regardless of soil conditions will cause trouble and it is the best part of wisdom to water with great care.

PERIOD OF SOWING AND FLOWERING

The perennials used may be sown during the months of August and September and they should be transplanted when large enough to handle and should later be placed in their flowering quarters to produce a display for spring, summer, and fall. The periods for sowing the annuals will vary somewhat according to the particular subject and the location whether in northern California or southern. In the south it is possible to have Nemesia, Phlox Drummondi, Linaria, Lobelia, Candytuft, Ageratum, and Petunia Rosy Morn flowering throughout the winter months from seed sown June to September, but in the north the garden lover is not so well favored and must sow these subjects in March and April for a summer display. Snapdragons are short lived because of the rust disease, and in the south are more satisfactory if sown in October for flowering in February and March; in the north sow from December to February for summer flowering. Pansies may be sown north or south in August or September.

Annuals for fall flowering display (such as Zinnias, Cosmos, and Tithonia) should be sown in April and May in all sections of the state. Asters and Summer-flowering Stocks to be sown from April to May; for winter display sow the Nice Stock type in August or September. Clarkia and Godetia may be sown in October or November; and Marigolds, Larkspur, Annual Chrysanthemum, Mignonette, Salpiglossis, Sunflowers, Shirley Poppy, Schizanthus, Centaureas, Nasturtiums may be sown from March to May for summer flowering.

Prepare beds and borders several weeks ahead with a dressing of manure or artificial fertilizer, well dug in. Have the soil fairly moist at time of planting, and plant firmly. Keep the ground well cultivated around the plants throughout the season and arrange them in groups of color so that the whole will blend into a perfect harmony.

WHEN AN EASTERNER GARDENS IN THE GOLDEN WEST

HELEN S. THORNE

EDITOR'S NOTE:—But seldom do we hear from a gardener so qualified by actual personal experience to present the differences and the similarities of garden-making East and West; a very special interest is, in consequence, attached to this article by Mrs. Oakleigh Thorne, an Easterner who has been discovering for herself new beauties and the myriad possibilities of gardening on the Pacific Coast. In Mrs. Thorne's garden at Millbrook, N. Y., Iris is featured in conjunction with water effects, but the dominant note is as of a cloistered allée made in trees. It is largely through Mrs. Thorne's active leadership that the Millbrook Garden Club has continuously maintained its position of prominence.

THERE is a very big difference between an Eastern garden in California and an Eastern gardener's garden in California, as I soon realized. However, the first is quite possible and with not as many omissions in plant life as one would think; depending largely on what one wishes, or can afford to spend.

I find that the average person making a garden in California splits the difference, so to speak—the backbone of the garden being planted in more or less drought-resisting shrubs; the grass reduced to a negligible and ornamental quantity; and the evanescent, decorative planting consisting of practically the same material which supplies summer color in our Eastern gardens.

Amateur gardeners usually speak from the point of view of the successes and failures of their own gardens—so, being both amateur and gardener, I am sure to follow the usual course; though I wish to state at once that I cannot see why one need fail with anything at Santa Barbara. It seems to me that everything known to horticulture has been tried there, and so many things remain to please the eye that I feel sure elimination takes place only through sheer lack of memory of name, or the accidental loss of material. So often I hear it said, "this won't grow here or that won't grow here"—only to find both growing in a wonderful state of perfection most likely in a neighbor's garden on the other side of the hedge.

Failures in California are generally due to the same causes which produce failures in Eastern gardens—lack of intelligence or care. Climate, soil, and cultivation must always rule, and these conditions can be much more perfectly controlled in California than in the East. Exact soil conditions in fine gardens East or West must always be more or less artificially made; the climate in California leaves little to wish for and cultivation is an exact science due to the necessity of irrigation during practically eight months of the year.

THE longing for a California garden entered my heart, I think, while I was crossing the great plains and desert for the first time—a psychic reaction perhaps—when that first descent into the luxury and beauty of the San Bernardino Valley fired my imagination with visions of gardens fit to place in Paradise.

It was several years before our own garden began to take

NECESSITY AGAIN PROVES A BLESSING IN DISGUISE

Ingenuity, meeting the fundamental need of irrigation, issues triumphant from the conflict; this solution has unique character and charm combined with economy of supply. (See accompanying text.) Mrs. Thorne's garden at Santa Barbara, Cal.

FRIENDLY, FRAGRANT VINES DRAPING THE PATIO WALLS

Bignonia, Bougainvillea, Jasmine, and Kennedyia each occupy a corner, touching hands in pleasant fashion along the wall and filling the enclosure with scented sweetness and cheer

HELIOTROPE AND ROSES KNOW NO BOUNDS

Scrambling gaily nearly roof-high, peering and nodding about our second story windows, Heliotrope and Roses breathe sweetly on winter mornings, delighting the eye with their mingled gold and lavender

shape; but the rugged desert world had made an indelible impression on my mind, and so had the Orange trees and green things of the San Bernardino, for I chose a rocky mountain-side with a wonderful view to the Pacific and its islands and a great towering mountain for background—and I have been busy building terraces and making soil ever since for the growing of those beautifully green and richly flowered plants which so filled me with a desire to possess their like.

Our mountain was very steep and I soon found that we had acquired a wonderful bit of scenery—beautiful rocks, lovely, pinkish-cream sandstone easily built into endless walls for the terraces—but had neither good soil nor sufficient water, two primary essentials for a California garden. Both of these conditions I have since very nearly been able to rectify, and our garden grows apace.

This dependence upon irrigation is, I believe, an economic factor forcing California gardening into those formal lines which lend themselves to its practice. A hedge is much more readily watered than broad, irregularly planted borders; and the topography of nearly all the coast counties suggests so strongly the gardens of Italy or Spain that these types seem to fall naturally into the landscape. Our garden is not an exception, and the water used in the highest basin passes on by gravity into various jets and pools which brighten and reflect the vegetation of the descending terraces. (Pictured on opposite page.)

THE choice of garden material is fairly bewildering, and plants and vines of all colors can readily be had for bloom practically all the year. One's choice seems directed more by conditions of sun or shade than by any other

WHAT THREE YEARS WILL DO FOR THE MONTEREY CYPRESS

Only eighteen inches high when set out in 1918, the Cypress hedge bordering the garden path is already ten feet

all colors grow without care, as do the blue Agapanthus and our Day-lilies. Watsonia grows tall and stately, putting to shame the efforts of our greenhouse in the East; Dahlias of the finest quality and type; and Chrysanthemums. Roses! Roses! Roses! the newest colors for cutting, the greatest bushes of old types still too lovely and unsurpassed; the indefatigable climbers fairly smothering little bungalows beneath their glory!

Shrubs like Bridal-wreath and Plumbago, Oleander and Choisya, grow to perfection. Ground covers—Myrtle (Vinca) and English Ivy, interesting Japanese Ivy—Camellias (in the shade) unreal in their beauty, but odorless; Hibiscus, and so on, in endless procession. A few have whims, but all can be persuaded, and therein lies the soul of the garden.

I am so often asked if the flowers in California smell as sweet as they do with us, and frankly I must say that I see no difference. Naturally California has many more flowers with perfume than are found in our gardens. The Heliotrope which climbs to the second story of our house, to my judgment, is quite as fragrant as any I have ever known. In winter mornings the perfume of the yellow Roses climbing upward with the masses of Heliotrope adds another factor, for all other conditions appear more or less subject to control, pruning and watering being chief considerations.

How wonderful to have our Silver Moon Roses bloom in September instead of June, as we do in California! In the patio four vines are planted—in the right-hand sunny corner, a soft, brick-red Bougainvillea which was in bloom last year from November to March; and Bignonia Tweediana, a lemon yellow, in flower from April to June; at the left, or shady corner, a Jasmine and a blue Kennedyia Comptoniana.

At first one is puzzled by the vagaries of various flowers and plants in regard to their season of bloom, but these vagaries are always accounted for when the answer is made to the question: "When did the rain commence?" This question may also read: "When did the gardener prune and water?" In California, intelligent gardening has boundless possibilities and corresponding delights, for the year has twelve growing months, and one is fairly astonished by the results of two or three years. For example, the Monterey Cypress hedges along the garden path are ten feet high, and were set out in the summer of 1918—little plants only eighteen inches tall, a result which an Eastern gardener could only achieve in so short a time by the planting of old, fully grown material—an expensive and difficult feat.

My gardening experience in California is that of only four winter seasons, but enough to make me know what an immense book remains still unopened.

Delphiniums are beautiful; great beds of colored Freesias can be naturalized under the Oaks; Tulips may be had in perfection; Clarkia and many of the annuals self-sow, some to the degree of being a nuisance. Iris germanica is very beautiful and an Italian form blooms practically every month in the year; the Japanese Iris grows to superb size in the water; Callas flourish in masses without either water or care; the Elliottiana dies down in the fall and appears again in the spring. Amaryllis of

BUILT TO WITHSTAND DROUGHT

Using Drought-resistant shrubs as a "backbone" and filling in with very much the same material as used in the Eastern summer garden maintains a continuously rich effect

delight to this bouquet, a delight ended only when one falls asleep at night with the odor of Violets and the scent of the Orange and Lemon blossoms from the orchard blowing in through the open windows.

SHORE-LINE GARDENS OF THE PACIFIC

MARK DANIELS

Landscape Architect Formerly in Charge of U. S. National Parks

The Marvelous Opportunities of the Pacific Coast for Creating All-year Gardens at the Ocean's Edge by Harmonizing Plant and Place

EDITOR'S NOTE:—Those of us who pleasurably recall "Green Symbols" (THE GARDEN MAGAZINE for August, 1921) are happy to be again in touch with Mr. Daniels; his wide and yet intimate knowledge of Western plant life, combined with rather rare imaginative insight, renders whatever he has to say not only authoritative but vividly arresting as well. The lovely shore-line garden pictured here is convincing testimony that Mr. Daniels knows how to practise what he preaches.

IT IS a sad commentary on human intelligence that men should be so slow to discover the unique characteristics of a country and to profit by them. In Arizona may be seen pitiful attempts to reproduce a New England Kitchen Garden, in Montana frozen spectres mutely testify to futile efforts to duplicate the vistas of the Villa D'Este. Our government installs huge electric elevators in the towering cliffs of our National Parks to enable the over-fed tourist to scale their heights with that ease which begets votes. Who knows that these same officials are not now considering the advisability of forcing the Fine Arts Commission to install a candy stand in the Lincoln Memorial. How long, O Lord, how long!

It is the new countries that suffer most from this lack of propriety and the eternal fitness of things, and the reason for it is quite apparent. The first settlers bring with them the memories of their former habitations and, in their efforts to make their new abode seem homelike, they set out to reproduce the old home place. This explains the heterogeneous array of architecture that may be found in most Western cities where an old Colonial house may be found wedged in between a Japanese tea-house and a Mexican adobe.

Not until the second generation do architecture and landscape gardening begin to crystalize into something like a definite form, and frequently not then. This is largely true of the whole Pacific slope and particularly true of California, with conditions in that state further aggravated in certain localities by a soil and climate that would seem to admit of almost any type of garden one may care to attempt. With vast areas of almost virgin alluvial soil and great thermal belts of frostless winters, it is not surprising that every conceivable type of garden, regardless of its fitness, has been built. Further than this, the kindliness of climate and soil have laid the curse of indifference on the inhabitants. By the same token that the shoemakers' children have no shoes, most Californians, when it comes to a garden, are willing to let nature take its course.

IN A land that admits of such a diversity in gardens, the problem of settling upon a characteristic style is difficult. No doubt along the Pacific coast any one of several different types might be established as more or less unique to the country, but the one that must appeal to every thoughtful observer is the all-year garden that runs to the ocean's edge. There are not many stretches of our coast line that admit of residential and garden development, and still fewer where one may live in comfort the year round without suffering the privations incident to isolation. On the Pacific coast there are a number of localities where such gardens may be built. The cities of Seattle, San Francisco, Los Angeles, and San Diego naturally have their shore-line gardens, all too few in number.

In Santa Barbara more work of this character has been done than elsewhere, without, I regret to say, a great deal of sympathetic appreciation of the possibilities of the cliffs that overhang the sea. There, with glorious opportunities for taking the garden to the water's edge, comparatively little of this character of designing has been done. Most of the pretentious places have been built upon the hilltops well back from the sea. It is true that a more expansive view is thus secured, but at the cost of that unique garden which, in California, thrives with its toes in the sea.

Further up the coast, not far from San Francisco, is a stretch of coast line which, until recently, has called in vain to garden builders. It is the forty or fifty miles of tawny beach and flower-festooned cliffs embracing and lying on either side of the Del Monte Peninsula. On the northern side of the peninsula overlooking the Monterey Bay is the old Spanish town of Monterey, first capital of the state. On the south, skirting the Carmel Bay, is Pebble Beach, with its forests of Pines and aged Cypress, bedewed with the salt sprays of the Pacific. If ever a coast were created for shore-line gardens, this one was. Here and there ancient Cypress trees, with gnarled and twisted roots clutching the granite cliffs, have defied the tempests through the centuries. Beneath their outstretched branches, Beach Asters and Evening Primroses nod in the breeze, and wild Honeysuckle hangs over the bluffs in festoons to purple pools below. Thousands of people have gasped at the sheer, exotic beauty of the place, and yet it has only been within the last few years that any homes have been built. Now, however, many are there and more are being either planned or constructed.

THE problems which such a place presents to the landscape architect are manifold and complex. In the first place, nature has set a standard which defies competition and scorns coöperation. The successions of wild flowers that follow each other in kaleidoscopic array mock the efforts of him who, in ignorance of their variety, would belittle their beauty by attempting to outshine it. He may plant a bed of yellow Pansies and come out some morning to find it totally eclipsed by hills about him ablaze with golden Poppies; his well-planned aisles of Cypress, in time, may be twisted by wind and weather into pitiful imitations of their century-old forbears that still stand along the coast line.

Perhaps it is this added complication, this deceptive nature of climate and soil that has deterred the development of a characteristic type of garden in this beautiful spot. In any case, only of late has success attended the gardener's efforts, despite the fact that nearly every type of garden has been tried.

But like any other problem, this one has its solution. In the sixteenth century a chain of missions was begun that finally stretched as far north as San Francisco. Most of them were on or near the coast. With no subsistence except that which the land afforded and with a love for beauty that brought forth gardens in deserts, these priests and monks finally learned what could and what could not be done in their gardens and orchards, and it is to these that the landscape architect should turn for the inspiration the ruins of these mission gardens still afford.

With the similarity between the climates and natural landscapes of parts of the California coast and the coast of southern Italy, it is not surprising that many attempts have been made to reproduce the Italian villas in California. This tendency has been further enhanced by the sort of semi-Italian, Spanish-Colonial architecture of the missions, but only a few efforts have been successful.

Most of them have met the same fate as that lugubrious product known to the trade as "mission furniture." No doubt

A SHORE-LINE GARDEN ON "THE GOLDEN GATE"

Which must contend with wind and weather and the scrambling urchins who are no respecters of property rights. Mark Daniels, Landscape Architect

the reason is that the effort has been to reproduce too faithfully, with little or no consideration of the differences in climate, soil, and natural growth, slight perhaps, but vitally important. Undoubtedly it is partly due to the designer's incomplete knowledge of the locality in which he is working. For example, one may stay a month on some ivory beach of the Pacific shore. Every day of his sojourn confirms his first impression that here is southern Italy outdone. But the day after his departure to begin his plans for an Italian garden great clouds may roll up from the horizon and fog banks may sweep in from the sea that would destroy sixty per cent. of his carefully selected plants. It is this infinite variety of weather, never severe or extreme, coupled with the suddenness of its changes that, to the minds of many, sets the Monterey country aside in a class all its own. Incidentally, it sets for the landscape gardener a problem whose solution is maddeningly elusive. To the close observer, however, the answer is ever present.

THERE is no time of year when masses of wild flowers are not in bloom in certain localities along the Pacific coast. In most instances these localities have already been chosen for summer homes or village sites. If the garden designer will

VISTAS OF "THE GOLDEN GATE"

Are framed by the columns of an exedra that marks the lower reaches of the soil in this garden designed by the author

base his plans upon the use of these, he will accomplish two results. He will have a garden that will be consistent with the local atmosphere and, above all, he will have one that will thrive.

It is not necessary to confine one's self to those particular trees, shrubs, and flowers that are indigenous to the locality. Frequently, varieties of these, both wild and cultivated, will thrive as well and lend that diversity of color and texture that alone can preserve a garden from the curse of black monotony.

Both Whistler and George Moore have said that nature is very seldom right. It is not inconceivable that they were wrong, but the fact remains that, in gardens, at least, nature usually needs considerable wet nursing, as it were. It does not do to leave the garden entirely in the hands of nature; and when I say that the shore line gardens of the Pacific should be planned with the indigenous growth as the basis of the scheme, I do not mean that all the gardener should do is uproot a truckload of shrubs and wild flowers from a near-by hill and plant them in his own ground in patterns to suit his fancy. I mean that he should try to work out his designs in such a manner as to use the native growth for his major masses and seasonal colors

with varieties of these families and occasional different families that thrive in similar climates and soils elsewhere, to lend variety to the garden. For, above all, a garden must thrive or it is worse than no garden.

Easterners are frequently astonished to find occasional beautiful homes along the Western coast with sickly, half-dead gardens, or none at all to speak of. One of the causes of this condition is the spottiness, if one may use the word, of the Western Coast. On one side of a tiny sapphire bay, Roses and Tulips, Peonies and Cyclamen may thrive in the open beneath a sky of perennial blue, while across the bay only the Wild Verbena, Beach Asters, and Manzanita will withstand the fog, the wind, and frequent sunless days.

This condition has driven some settlers back to their homes in the East, others have become enamored of it and remained. An artist, with the love of the beautiful deep in his soul, was being hectored by one of those who had returned to the East. "Why do you stay here?" asked the Easterner, "sooner or later you all come to New York to sell your wares. Why not live there?"

The artist replied: "Would you rather live where the Roses are grown or where they are sold?"

Along the Pacific coast the shore-line garden is now being grown. Soon it will be sold everywhere. The landscape architect is having his problems, but they are slowly being solved. Patience and a growing sympathetic knowledge of conditions are making the Western shore the cradle of a characteristically distinct type of garden.

ON THE SHORES OF CARMEL BAY

Nothing could be more appropriate than this Spanish house surrounded by Palms, Yuccas, Lupines, and wild fields of California Poppies

SEED SOWING CHARTS FOR THE WESTERN GARDENER

THOS. J. STEED
Vancouver, Wash.

I. ANNUAL FLOWERS FROM SEED

THIS planting table is prepared for average conditions of weather encountered in the Coast and Northwest region, that is west of the Cascades. The depth for covering seed will vary with conditions; where the soil is damp very little covering is required for fine seed. Hard rains will beat very fine seed too deeply into the soil where planted in the open—a possibility that must be guarded against by covering the beds during very heavy rains. Most seed will stand deeper planting in hot weather than in cool weather. While practically all seed must be planted deeper in dry weather, very fine seed is an exception; and the beds where such are planted must be kept moist.

Commercial fertilizer tends to make all flowers bloom earlier and more freely, and its use in combination with manure is preferred. A fertilizer analysing 10 to 2 per cent. phosphoric acid, 4 to 5 per cent. nitrogen, and 8 to 10 per cent. potash has been found satisfactory in such combination. It is better not to use commercial fertilizers alone for flowers as they require humus and the fertilizer does not supply that; but where fertilizer alone must be used it should contain 7 to 8 per cent. nitrogen. Practical sources of fertilizer material for nitrogen are dried blood and cotton seed meal, running from 7 to 15 per cent. nitrogen not so readily available as in nitrate of soda and sulphate of ammonia which contain 13 to 20 per cent. nitrogen. These two chemical sources are excellent for top dressings, while cotton seed meal and dried blood are not suitable because of their slow availability and moreover the dried blood has an objectionable odor. Bone meal contains from 16 to 22 per cent. phosphoric acid; while sulphate and muriate of potash furnish potash in 45 to 55 per cent.

NAME	DEPTH TO COVER inches	DISTANCE APART		TIME TO PLANT		FOR SUCCESSION WEEKS APART	LAST PLANTING	MANURE for each square yard bushels	FERTILIZER to square yard pounds	REMARKS
		rows inches	in row inches	in hot bed	in open					
Ageratum	1/16 to 1/8	12 to 14	8 to 10	February	April	4	July 1	1	1 to 2	Floss-flower, an excellent hardy annual for borders
Alyssum	1/16 to 1/8	6 to 8	4 to 8	February	April	3	July 25	1	1 to 2	Fine for rockeries and borders. White, fragrant
Aster	1/4	12 to 20	12 to 18	February	April	4	June 15	1 1/2	1 to 3	Use fertilizer for best results. Responds to potash
Balsam	1/2	12 to 20	12 to 16	March	May	4	June 25	1	1 to 3	A more dwarf growth is promoted by transplanting
Calliopsis	1/8	12 to 14	8 to 12	February	April	4	June 25	1	1 to 2	Very easy to grow anywhere
Candytuft	1/8	12 to 20	12 to 16	February	April	4	July 15	1	1 to 2	Rich moist soil preferable
Carnation	1/8	8 to 12	6 to 10	January	April	4	July 1	1 1/2	2 to 3	Very rich soil and moisture chief requirements
Celosia	1/8	12 to 14	10 to 12	March	May	4	July 1	1	1 to 2	Dwarf type makes very odd and attractive borders
Centaurea	1/8	6 to 8	4 to 6	February	April	4	July 10	1	1 to 2	This half hardy annual is fine for beds, borders, and cut flowers
Chrysanthemum	1/16 to 1/8	10 to 12	8 to 12	February	April	4	June 1	1 1/2	2 to 3	For show flowers disbud the large perennial type
Cosmos	1/8	12 to 24	10 to 16	February	April	3	July 1	1	1 to 2	Best suited for back-ground borders
Dahlia	1/4	18 to 24	14 to 18	February	April	4	June 1	1 1/2	2 to 3	Single sort is easiest to grow from seed
Gaillardia	1/4	6 to 10	6 to 8	February	April	3	July 1	1	1 to 2	Excellent for cut flowers
Gypsophila	1/4	12 to 16	10 to 12	February	April	3	July 1	1	1 to 2	Both the annual and perennial types easy to grow
Ipomoea	1/2	20 to 36	10 to 14	March	May		June 1	1 1/2	2 to 3	Slow to flower; fertilizer is very beneficial
Larkspur	1/4	10 to 18	6 to 10	February	April	4	June 30	1	1 to 2	Prefers moist soil and cool weather
Lobelia	1/16	8 to 10	6 to 8	January	April	3	June 15	1	1 to 2	Prefers cool moist soil
Lupin	1/8	10 to 16	10 to 12	February	April	4	June 15	1	1 to 2	Does not like too much sun
Marigold	1/4	12 to 20	12 to 18	March	April	3	July 15	1	1 to 2	On too rich a soil they go to weeds
Mignonette	1/8	10 to 14	6 to 8	February	April	3	August 1	1	1 to 2	Well suited for Northwest, liking cool nights
Mirabilis	1	18 to 24	10 to 16	February	April	6	June 1	1 1/2	2 to 3	One planting usually flowers through the season. A perennial in warm climates
Morning Glory	1/2	12 to 20	8 to 10	April	May	5	June 10	1	1 to 3	Japanese sorts are most showy and are more tender
Myosotis	1/8	8 to 10	6 to 8	February	April	4	June 1	1	1 to 3	Perennial in fact. Prefers cool nights and moist soil
Nasturtium, dwarf	1	10 to 12	10 to 12	February	April	4	July 15	1	1 to 2	One of the easiest flowers to grow, practically free from diseases and insects
Nasturtium, tall	1	12 to 18	10 to 12	February	April	5	July 1	1	1 to 2	One of the best general purpose annuals
Nigella	1/8	12 to 18	10 to 12	February	April	3	July 1	1	1 to 2	Beautiful odd flower, also called Devil-in-a-Bush
Pansy	1/16	8 to 10	4 to 8	January	March	4	July 25	1 1/2	2 to 3	Cool nights of the Coast and Northwest are ideal for them
Petunia	1/32	12 to 18	8 to 12	February	April	4	June 1	1 1/2	2 to 3	Careful not to cover seed too deep. Keep soil moist
Phlox	1/4	12 to 24	12 to 16	February	April	4	July 1	1	1 to 3	Keep flowers and seed pods picked to lengthen their flowering period
Pink	1/8	10 to 14	6 to 8	February	April	4	July 1	1	1 to 3	Can be easily kept through winter, but young plants give best results each year from seed
Poppy	1/8	8 to 16	6 to 10		April	3	July 1	1	1 to 2	Fine for beds and rockeries
Portulaca	1/8	12 to 18	8 to 12	April	May	4	June 1	1	1 to 2	Requires a sunny spot
Ricinus	1 1/2	40 to 60	36 to 60	March	May		June 1	2	2 to 3	Very rich soil, for the most attractive growth
Salpiglossis	1/4	16 to 20	12 to 16	February	April	4	June 15	1	1 to 2	Fine for beds and borders
Salvia	1/4	18 to 24	12 to 18	March	May	3	June 30	1 1/2	1 to 3	A lover of warm weather
Stock	1/8	12 to 20	10 to 16	March	May	3	June 30	1	1 to 2	A lover of cool moist soil
Sunflower	1	24 to 36	18 to 30	March	April	4	June 30	1	1 to 3	Will grow anywhere there is plenty of sunshine
Sweet-peas	1 to 1 1/2	36 to 48	3 to 8		November and March	4	June 30	2	2 to 3	Plant in trenches 6 inches below level of soil
Verbena	1/8	12 to 18	10 to 14	March	April	4	June 1	1 1/2	1 to 3	Very desirable for borders and rockeries
Zinnia	1/4	18 to 24	14 to 18	March	April	4	June 30	1	1 to 2	Excellent for bed, can be grown on most soils

II. THE HOME VEGETABLE PLOT

This vegetable planting table is designed to serve the Central and Western States. Time for planting will of necessity be somewhat different in certain sections because of mountain or coast protection. Moreover the seasons vary too.

The time given in the table is figured on a general average. When trees begin leafing out it is a sure sign that spring is at hand and planting in the open can begin.

The amounts of seed given in table for a hundred feet of row is sufficient to produce an extra good stand from the start, which is very necessary for a good early garden; it is always better to thin than to replant. Replanting not only delays the crop but, in fact, seldom makes good.

Don't cultivate a garden when the soil is very wet. Late maturing vegetables such as Watermelons, Muskmelons, Pumpkins, Lima Bean (large sort), may be started in the hotbed about six weeks before time to plant in the open as given in the table and much time will be gained. In transplanting take up plenty of soil with the roots; it will ensure continuous growth and stunting is avoided.

NAME	SEED OR PLANTS PER 100 FOOT ROW	DISTANCE APART		DEPTH TO COVER SEED (INCHES)	NUMBER OF DAYS TO MATURE	TIME TO PLANT	PREFERRED MANURE	AMOUNT OF FERTILIZER TO 100 FT. ROW (bu.)	VARIETIES SUGGESTED
		rows inches	in drill inches						
Asparagus (Seed)	1 oz.	18 to 24	4 to 6	½	two to three years	April 1st to June 1st	horse	16 to 20	Barr's Mammoth, Palmetto. Be sure that manure used is thoroughly rotted
Asparagus (Roots)	75 roots	30 to 40	18	6	one to two years	April 1st to May 15th	horse	16 to 20	
Beans, Bush	1 pt.	18 to 24	5 to 6	1	50 to 65 days	April 1st to July 15th	cow	10 to 15	Burpee's Stringless Green Pod, White Wax, Golden Wax
Beans, Pole	1 pt.	24 to 36	12 to 24	1	65 to 90	April 15th to June 1st	cow	10 to 15	Kentucky Wonder, Carmine, and Lazy Wife
Beans, Bush Lima	1 pt.	18 to 24	8 to 12	1	65 to 80	April 15th to May 15th	cow	10 to 16	Fordhook, Burpee Improved, Wood's Prolific
Beans, Pole Lima	1 pt.	24 to 36	12 to 18	1	70 to 90	April 15th to May 15th	cow	12 to 16	Small White or Butter Bean, Early Leviathan
Beets	1½ ozs.	12 to 20	3 to 8	½ to 1	65 to 85	April 1st to June 1st	horse	10 to 16	Black Red Ball, Detroit Dark Red, Early Egyptian
Brussels' Sprouts	1 oz.	18 to 30	12 to 18	½	75 to 100	April 1st to July 1st	horse	10 to 16	Dwarf Improved
Cabbage, Early	1 oz.	18 to 30	12 to 18	½	80 to 100	Mch. 1 to Apr. 15, in open in hotbed, February	horse or cow	12 to 20	Early Jersey Wakefield. All-head Early. Early Drumhead
Cabbage, Late	1 oz.	24 to 36	15 to 20	½	90 to 120	April 1st to June 15th	cow	12 to 20	Surehead. Late Drumhead. Danish Ballhead
Carrot	1 oz.	15 to 20	3 to 6	½	75 to 100	April 1st to June 1st	horse	12 to 16	Danvers half long Oxheart
Cauliflower	½ oz.	20 to 30	12 to 18	½	90 to 130	Apr. 1 to June 1, in open in hotbed, February	cow	16 to 20	Snow Ball, Dry Weather, Early Alba
Celery	½ oz.	20 to 36	6 to 8	⅛	120 to 140	Apr. 15 to May 15 in hot bed March	cow	18 to 20	Golden Self Blanching. Silver Plume
Chard	1 oz.	18 to 24	4 to 6	½	75 to 90	April 1st to June 15th	cow	12 to 16	Giant Lucullus
Corn, Sweet	1 oz.	24 to 36	24 to 30	1	75 to 100	April 1st to June 15th	horse	12 to 16	Golden Bantam, Country Gentleman
Cucumber	1 oz.	24 to 36	24 to 36	½ to 1	75 to 90	April 1st to June 1st	horse	10 to 12	Fordhook, White Spine, Long Green, Boston Pickling
Egg Plant	½ oz.	24 to 30	12 to 24	½	95 to 130	April 15th to June 1st in hotbed, March	cow or sheep	12 to 15	Black Beauty, Pearl, White, New York Improved
Endive	1 oz.	18 to 24	8 to 12	½	95 to 150	May and June	horse	10 to 12	Broad Leaved Batavian
Horseradish	(roots)	20 to 30	6 to 12	2 to 3	one to two years	April 1st	horse	12 to 16	Use 100 to 200 roots
Kale	1 oz.	18 to 24	6 to 12	½	75 to 120	March 1st to August 15th	horse	10 to 15	Emerald Isle, Dwarf Green Curled
Kohlrabi	½ oz.	18 to 20	6 to 8	½	70 to 95	April to May	horse	10 to 15	Early White Vienna
Lettuce	½ oz.	12 to 20	6 to 8	½	65 to 90	March 1st to August 20th	horse	12 to 16	Boston Market, Delicious, Hanson
Muskmelon	1 oz.	36 to 48	24 to 36	½ to 1	100 to 135	April 1st to June 1st	horse	10 to 12	Rocky Ford, Emerald Gem
Mustard	1 oz.	12 to 20	5 to 8	½	50 to 75	March 1st to August 20th	horse	10 to 16	Ostrich Plume and Elephant Ear
Okra	1 oz.	24 to 30	18 to 24	½ to 1	90 to 125	May 1st to June 1st	horse	12 to 16	Dwarf Green
Onion (Seed)	1 oz.	12 to 18	3 to 6	½	95 to 130	April 1st to June 1st	cow	15 to 18	Prizetaker, Red Weathersfield, Yellow Globe, Danvers.
Onion (Sets)	1 qt.	12 to 18	5 to 6	1	75 to 90	September, April, and May	cow	15 to 18	Silver King
Parsley	½ oz.	12 to 18	4 to 6	¼	90 to 120	April 1st to June 1st	horse	12 to 18	Moss Curled
Parsnip	½ oz.	12 to 18	4 to 6	½	95 to 120	April 1st to June 1st	horse	12 to 15	Hollow Crown, Long White Dutch
Peas	1½ pts.	24 to 36	2 to 3	1 to 2	60 to 90	March 1st to June 15th	cow	10 to 16	Earliest-of-All or Alaska, Gradus, Telephone
Pepper	½ oz.	18 to 24	12 to 18	½	95 to 150	May 1st to June 15th in hotbed, March	poultry or sheep	12 to 16	Chinese Giant, Bell or Bull Nose. Tabasco
Potatoes, White	6 to 8 lbs	24 to 30	12 to 18	2 to 4	90 to 130	March to June 15th	horse	12 to 16	Bliss' Triumph, Irish Cobbler
Potatoes, Sweet (Plants)	75 to 100	24 to 36	12 to 18	3 to 4	95 to 150	April 1st to June 1st	cow (and commercial fertilizer)	10 to 20 10 to 15 lbs.	Early Jersey, Triumph, Porto Rico Yellow Yam
Pumpkin	½ oz.	72 to 96	72 to 96	1	100 to 150	May 1st to June 1st	cow	8 to 12	Sugar or Sweet Pie, Jumbo or Mammoth
Radish	1 oz.	12 to 18	1 to 3	½	25 to 48	March 1st to August 20th	horse	12 to 18	Rapid Red, French Breakfast, White Icicle, Early Long Scarlet
Rhubarb (Roots)	50 to 75	24 to 36	18 to 24	3 to 4 Crown or growing Tips must not be below surface	one to two years	April to June 1st	horse	16 to 18	Mammoth Victoria
Rutabaga	1 oz.	18 to 24	6 to 10	½	75 to 100	May 1st to June 15th	cow	12 to 18	King of Swedes, Purple Top
Salsify	1 oz.	12 to 20	3 to 4	½	120 to 160	April 1st to May 20th	horse	12 to 16	Sandwich Island or Mammoth
Spinach	1 oz.	12 to 18	2 to 5	½	35 to 60	March 1st to August	horse	10 to 16	Mammoth Victoria, Savoy-leaved
Squash, early bush	1 oz.	24 to 30	18 to 24	1	65 to 90	April 15th to June 15th	horse	10 to 15	Early Summer Crook Neck, White Bush, Scallop, Fordhook
Squash, late running	½ oz.	48 to 72	36 to 48	1	90 to 150	April 15th to June 1st	horse	8 to 12	Hubbard, Boston Marrow
Tomato (Seed)	½ oz.	18 to 36	12 to 24	½	90 to 140	May 1st to June hot bed February	cow or horse	12 to 18	June Pink, earliest pink of the earlies
Tomato (Plants)	50 to 100	18 to 36	12 to 24	roots 2 to 3	60 to 90	May 1st to July 1st	cow or horse	12 to 18	Ponderosa, Earliana
Turnip	1 oz.	12 to 24	2 to 6	½	50 to 80	March to August	cow	12 to 16	Early Scarlet White Top, White Globe, Early White Flat
Watermelon	1 oz.	48 to 120	48 to 96	1	100 to 130	April 15th to June 1st	horse	10 to 12	Kleckleys' Sweet, Halbert Honey, Baby Delight, Georgia Rattle Snake

THE HOUSE THAT WAS BUILT FOR A GARDEN

ARTHUR W. COLTON

HOME BUILDING is no longer merely a matter of mortar and shingles; nowadays we build with living flowers and trees as well—witness the steadily growing group of landscape architects.

Past the pioneer period where shelter was the sole consideration, and having mercifully survived the terrible years when architecture lost its early innocence and awakened to a crude and blatant self-consciousness that struggled for expression in "ginger-bread" ornament and innumerable angles, we have emerged into more gracious days with the leisure and the learning to look about and determine what sort of homes we really want, and why.

Nowadays a house is not arbitrarily set down anywhere on a plot of land and then followed by a query as to where the garden shall go. Quite the contrary—the particular piece of ground in question is first carefully studied.

For it is the land, its character and spirit, that determines what the house shall be. When this fundamental principle is disregarded we at once sense the "something wrong." Grievous to see are great residences perched bleakly in unsuitable environment with no appearance of belonging, with a futile air of having been temporarily set down upon the earth rather than of being there comfortably at ease and at one with it.

A dwelling may be made or marred by its approach, by the massing of woodland or shrubbery on this side or that, by the disposition of flower-beds and borders, all of which must, for harmony of finished effect, be included in the original plan.

Because garden and house are so inevitably linked, so essentially interdependent, we believe that gardeners everywhere will find much to interest and inspire in this series of articles, especially prepared for us by Mr. Colton, which presents some happy solutions achieved by Americans of skill and imagination East and West.

I.—"HAVENWOOD," THE HOME OF MR. EDWARD L. RYERSON AT LAKE FOREST, ILLINOIS

HOWARD VAN DOREN SHAW, ARCHITECT; ROSE STANDISH NICHOLS, LANDSCAPE ARCHITECT

IT may be said—with sufficient qualifications—that the old Italian never did, naturally, like nature. Wild nature was as barbarous and repellent to him as Gothic; and yet his climate called him to live in the open air. Hence his art al fresco, and his garden where he lived in the open air with his culture around him. He inherited his tastes from his Roman predecessors whose villa gardens were something like his city-house atrium, put outside instead of inside. He sought to gratify a similar need and feeling; the atrium was an open air interior, a garden within the house.

When Browning in Italy expressed his longing for England—"Oh, to be in England now that April's there," it was a longing altogether for English flowers and birds, the dew on the grass, and the budding trees. "While up at a villa one lives, I maintain it, no more than a beast", says his "Italian Person of Quality" who thought of the country only with disgust for its inferior interest to a city square. That "the proper study of mankind is man," is an opinion of Mediterranean origin, whereas:

> One instinct from the vernal wood
> Can teach us more of man
> Than all the ages can.

is a purely "Nordic" doctrine.

The reference of certain features of American landscape gardening to such remote sources has its use, if it serves to remind us that, where they have racial and climatic sources so far-reaching and fundamental, the taste which produced those features is presumably sound. Except for the Californian coast, ours is no Mediterranean climate or countryside, and ours is a rural more than a civic tradition. Many of us will still find more pleasure when the doors of our familiar outgoing lead into the immediate shadows of the woods than when they open on structurally ordered gardens. The sense of the woods is in our bones, and the wild meadow flowers are dear to us in some different fashion than pedigreed Roses and all exotic bloom.

Theorizing, from Pückler to Parsons, seems to maintain that the garden is properly an extension of the house, an intermediary between architecture and nature, between dwelling and park; and in a large estate of many hundred acres something of that kind would be apt to develop; but while all this has interest as an observed phenomenon, it has no authority as a governing formula, to hamper any landscape gardener in his plans or any owner of an estate from having his woods at his doors and his gardens beyond his woods, if that arrangement gives him the values which he needs.

IN MOST Italian or French gardens of any size, the outstanding lesson is that the estate is studied as a unit. Each has its bois or ilex wood, whose mass and freedom and shadows are used as a foil for the intensive cultivation and artificial formality of the forecourt, the garden, the terraces, the tapis vert and the geometric allées. The designer places his woods where they will be most effective—if he is planting his woods; or—as is usually the case in this country—he places his gardens, etc., where he wants them in relation to the woods already there. When laying out a big place, one tries for variety, for surprises, for places to walk to, in other words for developing the whole property to get all the possible effects. The programme of the house and garden is but a part of the programme. The estate—not the house-and-garden alone—is the unit. If you see the whole house and garden at a glance so that there is no mystery, "no place to go"—then proximity may be your undoing. The garden can be made a part of the house without being next to it.

As the unit garden-and-house is a more complex and interesting unit than the house alone, so is the estate-unit still more complex and interesting.

In an estate-unit of no more than twenty-six acres, it seems feasible to make the oneness so intimately felt, that the great garden can be placed five hundred feet away, as at "Havenwood," without loosing its structural relation with the house. Whether a driveway crossing between them is desirable or not is no doubt a matter of personal feeling—not strictly aesthetic—but the feeling and choice which places the living parts of the house to look out on forest, lawn, meadow, and ravine, rather than directly on a beautifully composed garden, is, I suspect, a national rather than a personal difference of feeling and choice.

"Havenwood," the Ryerson estate at Lake Forest, is a conspicuously successful example of coherent planning. The home is the whole estate, and those who live in it live all over it. The plan embraces the property; and like the larger Italian, the Spanish "Generalife" and all French estates, is all thought out. The woods are used to give mass, to separate and surround the garden rooms like walls, in the manner of Versailles.

Gardens breathing the personality of their owners are far more

interesting than "landscape gardener" types, those "gardens without a past." But this garden must always have been unique. It was planted originally by Rose Standish Nichols of Boston, and has been improved and given added character since by the owners.

THERE are in fact five gardens on the place, if you understand considerable plantations of flowers as "gardens." The terrace, L shaped, 150 x 50 ft., is all flowers and tubs of Oleanders (a welcome change from the overdone Box and Bay), and is accessible by stepping from the windows of the living-room, the dining-room, breakfast-room, library, and study. There are two fountains on this terrace; and, as every garden must be enclosed, this is folded between the main house, the balustrade and the Cedars of the adjoining woods. Then there is the wild garden, surrounded by woods; the water garden in the ravine; and a very extensive and formal vegetable and "picking" garden; all connected by galleries or allées through the woods lined on either side by closely planted and trimmed trees; and allées are cut through the woods at various points, creating vistas with statuary at dramatic points.

The great garden—open only for some sixty feet on one side, to give a glimpse of the fountain from the house, and surrounded by a raised terrace and then by a dense Cedar planting—is tied to the house by the tapis vert, flanked on each side by a row of Hawthorns, as formal as any garden could be. In this garden Mrs. Ryerson entertains, and here plays are given, the audience looking down from the gazebo or tea-house. Infinite charm is added by this walk down the long avenue from the house: it is another room connected by a hall. A little of the dramatic—not theatrical—helps every garden. No garden is independent of its approaches and surroundings, as no picture is independent of its frame, or the room it hangs in.

The four statues on the fountain came from an old garden in Verona. The tea-house ends one axis of the garden; and a gateway flanked by pergolas is opposite. The feature of the whole planting is the judicious and profuse use of Cedars, which have been transplanted from the Wisconsin woods by the carload.

TWO GENTLEMEN OF VERONA—AND TWO LADIES

Quite reconciled and at ease appear these old-world folk brought across the seas and established as guardians of the pool in the "great garden" at Havenwood. (See descriptive text above)

A BEAUTIFULLY SATISFYING "PERFECTION WITHOUT PRECISION"

Without any loss of dignity or any belittling pettinesses nature has here been moulded to suit man's inclination; turf flowing freely to meet the fringed woodland, orderly and yet unhampered masses of color give a rare impression of combined spaciousness and intimacy. The visitor at once senses the friendly welcome of these gardens and their restful freedom

Many are thirty feet high with trunks twelve inches in diameter. These surround the garden, border the forecourt and terraces, and form a marvelous contrast of blue green with the Oaks and Maples.

THE house was built in 1917 in the middle of a twenty-six acre tract of woods, which seems to have had no special feature except a ravine along the southern border. Its extraordinary success was built up from ordinary conditions.

As the prevailing summer breezes are from the southwest, a broad swath was cut through the trees from southwest to northeast. This swath, which determined the facing of the house, is now a broad lawn sweeping down southwestward to the ravine, and opening on this lawn are the main living rooms.

The house is Indiana limestone, with variegated slate roof. The soffit of the broadly overhanging eaves is painted in simple designs, in red, black, white, blue, and gold; and the ceilings of the second-story loggias are in old tapestry, blue and gold. The awnings are Venetian sail-cloth. The general scheme is of Italian suggestion. The forecourt, paved and enclosed with iron grilles between stone posts, is on the northeast front; the driveway passes through it; and beyond the court to the northeast stretches a tapis vert, a straight grassy avenue five hundred feet long, thickly bordered with trees and making a dramatic approach to the great garden, which is most lovely in composition and all-summer colors.

The beauty of the Ryerson place as a whole, the graciousness of Mr. Shaw's work as a composition, cannot be conveyed either by description or photographs; and yet one can hardly look thoughtfully at the plates and not feel that there is something here often longed for and seldom seen—a perfection without precision, an abundance without confusion, a dignity without effort, a something beyond all these, a something indescribable, which quiets the restless dissatisfactions one has had in the contemplation of houses and gardens, and gives one a sense of happiness enclosed in a cloudless peace.

The sharing of home-grown fruits and flowers is half the fun of gardening, so that a basket of attractive shape always appeals to the gardener

Vividly alive and expressive of the vibrant joy of spring, this table fountain, designed by Paul Conkling, seems especially made for the lover of out-of-doors

Flowers, Ivy, or a lacy Fern swinging in the window delight the heart of the gardener. This basket of creamy faience with its bold design in royal blue, rich green, and a touch of yellow, proves both decorative and serviceable

Such gleeful little souls to come upon in an early morning stroll through the garden, laughing up at a summer sky and the birds which wheel and dip to drink. Fountain design by Edith Baretto Parsons

Having one's "snippers" attached to a light yet capacious receptacle for superfluous twigs, dead stalks, etc., prevents their being annoyingly mislaid; the gardener always welcomes facilitating devices of this kind

FOR THE GARDENER'S CHRISTMAS

Where a rocky ledge sweeps up against the blue is the ideal setting for this bronze, a dominating piece of sculpture by Harriet W. Frishmuth, a worthy crown for some dramatic point overlooking the garden

This sturdy youngster with face upturned to greet the falling waters seems the very epitome of their gaiety and on the friendliest of terms with his water-loving brethren. Bronze fountain slightly less than three and a half feet high; Edith Baretto Parsons, sculptor

The silver vase is eminently appropriate for the dining table; the restrained shape, delicately patterned and finished in soft gray tones, is admirable for such use

Grace and simplicity of line characterize the charming bronze by Polly Carpenter, which needs only a Water-lily, a slender Calla, or a few golden Primroses to make it completely satisfying

WHAT AMERICA HAS DONE FOR THE DAHLIA

Triumph of the Most Popular of Present-Day Favorites and the Steps of Its Ascent—A Tribute to Those Who Fostered the Fancy in the Pioneer Period

EDITOR'S NOTE:—This presentation of the personalities concerned in the early days of the Dahlia in our gardens adds one more chapter to the collection of similar reviews in THE GARDEN MAGAZINE that have discussed the Rose, the Peony, the Iris. Others, it is hoped, will follow from time to time. Each article is prepared by a devoted student of the particular flower and embodies all the facts actually available in an effort to render honor to whom honor is due. The early records of American gardening are but fragmentary and the effort to present a consecutive account involves much study and research, which is undertaken always as an affectionate tribute by an enthusiastic admirer to the subject of his devotion. Prof. Norton is busy cataloguing the entire nomenclature of the numerous varieties. It is hoped that any significant fact that may be within the knowledge of any reader and not generally known will be communicated for the purpose of the record, and in the interests of truth.

I. EARLY DAYS AND THE PIONEERS

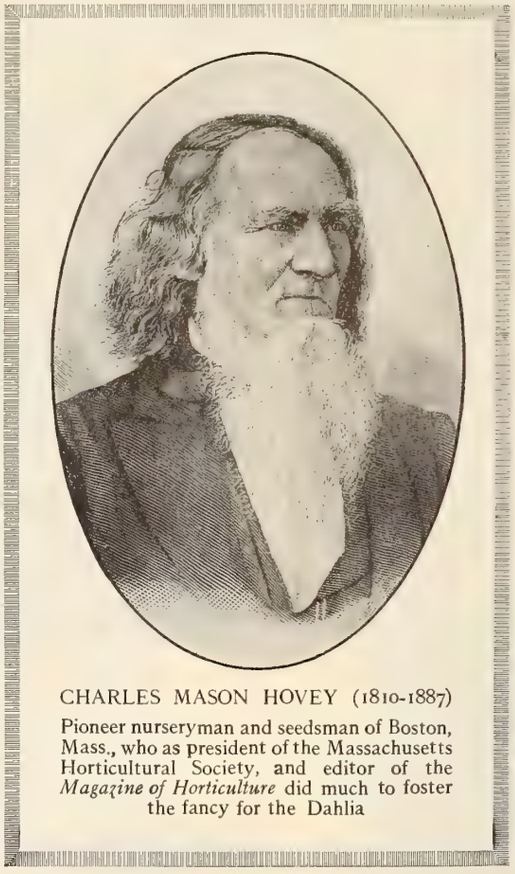
J. B. S. NORTON
University of Maryland

ALMOST within the memory of living men the Dahlia has expanded from the single flower of limited color range, known a hundred years ago, into greater variety of form and hue than any flower to-day under cultivation. In this stupendous transformation—contemporaneous, strangely enough, with her own period of greatest development—what part has America played?

As compared with Roses or Lilies, for example, the Dahlia is a new thing; its history as a garden flower did not begin until after the opening of the nineteenth century, though known to our Aztec predecessors and used by them.

About 1814, when double Dahlias first began to be cultivated in Europe, reputable firms dealing in seeds and plants were just being established in America. Importation from Europe (especially from England) was relied upon, when the best was wanted in any line; consequently we find a considerable number of the early English varieties of Dahlias in American catalogues in the twenties of the last century.

Grant Thorburn of New York was a leader in the seed and plant business at that time, and as the Show Dahlia craze developed during the next ten years in England and was reflected in America, Thorburn became one of the most notable importers of the new varieties each year. The great Prince establishment at Flushing, Long Island, also had extensive Dahlia gardens and its annual catalogues listed many of the latest English Show varieties.



CHARLES MASON HOVEY (1810-1887)
Pioneer nurseryman and seedsman of Boston, Mass., who as president of the Massachusetts Horticultural Society, and editor of the *Magazine of Horticulture* did much to foster the fancy for the Dahlia

A man of great activity, as well as love for all things horticultural, was C. M. Hovey of Boston. A dealer in horticultural supplies and editor of the old *Magazine of Horticulture*, he did much to promote this branch of practical science and was an ardent supporter of the Massachusetts Horticultural Society. He was also an active backer of the Dahlia shows that began to flourish in imitation of those held in England. Hovey and Thorburn, Marshall P. Wilder the well-known pomologist of Boston, the Buists of Philadelphia, and a few others vied with one another in the big shows held in Boston, New York, and even in Washington, which was then still quite a small town.

Few new varieties were produced in America in those days, and the new European introductions replaced those of the previous year in the gardens with even greater rapidity than new Dahlia varieties succeed one another in our present-day catalogues.

Robert Buist put a few seedlings on the market about 1840; and in the long lists of "Lords," "Ladies," "Dukes," and "Duchesses" in the Dahlia catalogues, a few names of American heroes also appear. We see also in catalogues in the forties the names of Heiskill, Hancock, and especially Schmitz as American originators of Dahlias. The last named lived at Roxborough near Philadelphia, and the Dreer catalogues of that time carry announcements of his productions. But after all, what then was matters little, for the Dahlias of that time and their sponsors are gone, leaving scant influence on present-day Dahlia culture in America. The Show Dahlia ran its course and its popularity faded in America apparently before it did in England.

Most of the present-day leaders in Dahlia development in this country have, like Topsy, just grown. Unknown cultivators of small gardens "grew Dahlias also." Nobody told them to like the humble flower. Only the unfolding glories expanding in the autumn morning's dew spoke to them. They grew more Dahlias. They became more discriminating. They began to grow seedlings. A fine new kind came. It was so easy! The Dahlia had acquired a new devotee. The country soon became filled with admirers.

ABOUT the middle of the century commenced what might be called the period of disfavor. This does not mean that people stopped growing Dahlias. During the period of its greatest unpopularity—or rather dispopularity—both in England and America, Dahlias were listed in many catalogues each year; English breeders like Keynes were all the time putting out varieties—no better than the older ones in most cases it is true—and thousands of roots and plants were sold annually. But in the attention of fanciers and leaders in flower growing other flowers had displaced the Dahlia.

Judging from the fact that they steadily continued to exhibit Dahlias at the Massachusetts Horticultural Society's shows, the Hoveys may be credited for having helped Dahlias from

fading entirely from public notice until such time as the introduction of the Cactus type gave fresh zest to their culture.

There seems to be some mystery about the Dahlia in America from several years before the period marked by the advent of the Cactus Dahlia up to about 1890. It is hard to find out just what was being done with it then; perhaps no historian thought it worthy of notice; but it was during this time that the modern Dahlia interests had their birth and obscure childhood, Many present-day Dahlia worshippers were then active young men and surely some of them will come forward and dispel the gloom that surrounds the babyhood of their favorite. A number of the fine old varieties yet grown came in then, but they do not carry the brand of their originators; unhappily, the practice of cataloguing the originator with the variety, quite general before 1860, has only just begun to be used again.

We know that Henderson and Dreer were doing much in introducing new Dahlias and doubtless there were others also. Then with the rapid development of the great florist establishments about 1890, the organization of the business of flower growing, and the introduction of the new Decorative, Peony-flowered, and Collarette types in Europe, Dahlia raising received fresh opportunity for development. In 1895 the original American Dahlia Society was organized. Peacock and Michel, present-day Dahlia leaders, were among the organizers. Unfortunately, it soon was chloroformed by some of its originators; and, while it showed the tendency to "get together," did not have a chance to help the cause much.

JOSIAH T. MAREAN

Justice of the New York State Supreme Court whose fifteen years of breeding and selection in Dahlias has developed a well-defined strain of large-flowered Decoratives. The Judge is alongside his variety Emperor

BUT who are the great breeders producing the many new American Dahlias that come into our gardens each year? The ease with which the Dahlia varies into thousands of luxurious form-and-color combinations has made it such a flower for the multitude that its prophets are picked with difficulty from the many of lesser rank who aided its development. Other flowers that more grudgingly give up their treasures have produced greater lights among their human friends. We get Dahlia flowers from seed in four or five months, and three years is considered enough for test before introducing. Compare that with ten or even twenty years from seed to market for a new Peony. It is so easy to get new Dahlia varieties of some merit that dealer vies with dealer year after year to offer pages of his own novel creations in each annual catalogue. Thus few stand out as major prophets of the Dahlia.

All the distinct classes now grown have come into being in European gardens; the Cactus, Decorative, Peony-flowered, and Collarette types originating, or at least having their greatest development, within the last twenty-five to forty years. However, the Dahlia has acquired certain characters that are distinctively American. When we see the splendid combinations of reds and yellows blending in indescribable mixtures in our most popular varieties, we do not have to go far to find their counterpart in the October landscape, in whose autumn colors visitors from other countries find a distinctively American wonder.

In America we love big, brilliant, glorious things. Each year

J. J. BROOMALL

One of the earliest Dahlia fanciers in California and leader of contemporary growers and raisers

RICHARD VINCENT, JR.

Whose enthusiasm as President of the American Dahlia Society from its inception has won him the admiration of the trade and amateur growers

ELIZABETH LYMBERY

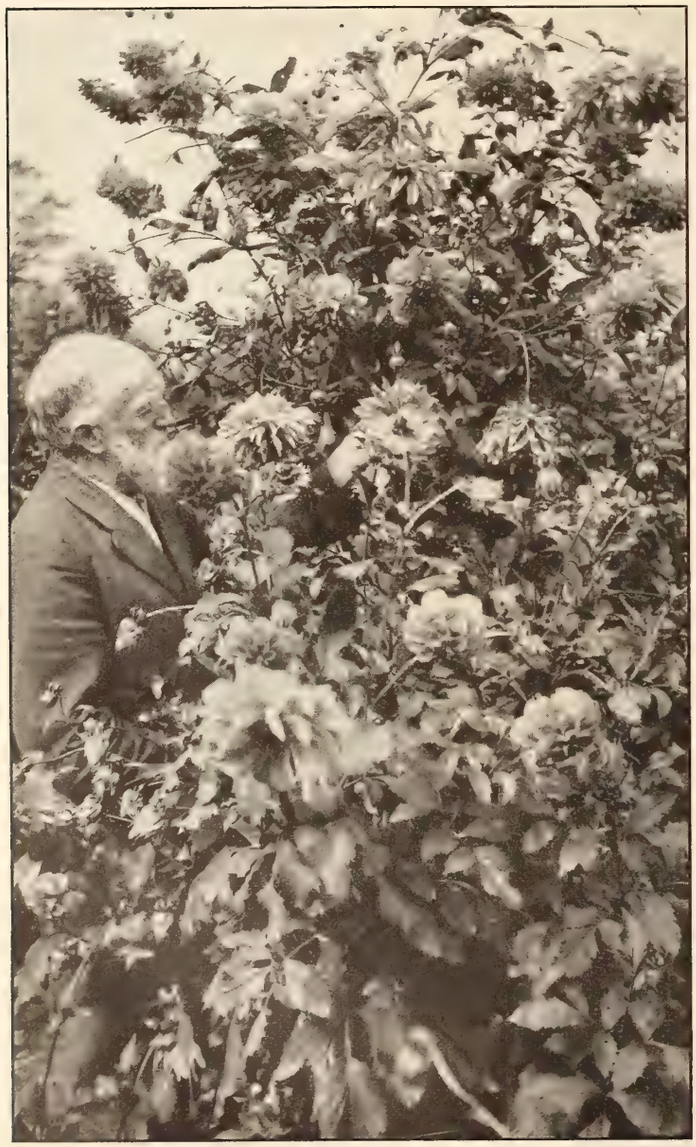
Who, as Bessie Boston, became an enthusiast of the Dahlia and is actively identified with its progress in California

as we look over the Dahlia shows and the new catalogues, while the more refined tints and forms are not neglected, more and more of the giant Decoratives and monster Hybrid Cactus varieties of striking colors are in evidence. We find these prominent among admired new kinds coming from the breeding grounds of the Slocombe Gardens, G. L. Stillman, Judge Marean, and the group of California Dahlia originators who are now supplying us with many of our best new varieties. We find the same tendencies in the Peony-flowered kinds, of which Stillman alone has given us a race of his own, but the great, fine-colored Decorative is becoming America's own.

THERE are still great possibilities. A look over the history of the Dahlia; the new classes that have come out of it in comparatively recent times; the interest taken in Dahlias now; the closer study being given to their origin, structure, and wild forms by Dr. W. E. Safford and others, all seem to point to continued and possibly startling development in this flower. The foundations are laid for America to give us a type not yet thought of. Some one with a vision for the different will yet create the real American Dahlia! Just what it will be is a secret of the future, but there is much preparatory work that can be definitely laid out and done. There is no certain body of knowledge of the genetics of Dahlias in the hands of breeders; we do not know the hereditary constitution of our best varieties and are working in the dark in growing seedlings from them, and we have only here and there brief notes on how the different species and varieties cross and how they influence one another in the offspring. Accurate methods of pollination need to be worked out. The reason for the short life of many perfectly good varieties; the cause of deterioration under certain conditions, themselves not well known; and many other similar problems will give plenty of work for thought and experiment.

W. W. WILMORE

Whose originations of Dahlias have made Denver, Colorado, a centre of interest. Shown here with his son, killed in France during the war



J. H. SLOCOMBE

Himself nearly six feet tall standing among sturdy plants of his own variety, Annie Slocombe. He was one of the dominant raisers in the East

The field of the Dahlia as an ornamental flower is rather narrow, and while there may be no need to develop it to take the place of any other flower, it has possibilities in that direction that have not yet been touched. Dahlias for different seasons, soils, climates, situations, as well as for different ornamental purposes may in the future be produced where now they are available only as cut flowers and, to a limited extent, garden decoration.

THIS sketch should not be closed without mentioning the great stimulus the Dahlia has received in the United States from the present American Dahlia Society since its organization in 1915. The New England Dahlia Society, with its numerous enthusiastic devotees; many local societies in the Dahlia-growing sections of the country; and especially the great California Dahlia Society with all its opportunities in the ideal Dahlia climate of the Pacific Coast from Canada southward, such as it is not our privilege in the East to enjoy, have all advanced the cause of the Dahlia. J. J. Broomall, Mrs. E. W. Lymbery (Bessie Boston), and several others of the California society are, in fact, making that state the chief centre of Dahlia breeding in America.

Able and devoted amateurs, often with opportunities and facilities denied to professionals, are doing their part, and some of our finest novelties are coming from their gardens. The work of scientific institutions is exemplified by the trial garden at Storrs, Conn., and the new one just starting this year at the University of Maryland.

Among important contributions to the meagre supply of Dahlia literature in this country is a bulletin dating back to 1897 issued by W. Miller as a result of variety tests at Cornell.

The extensive testing of varieties carried on at the Experiment Station at Geneva, N. Y., by F. H. Hall also deserves our gratitude as Mr. Hall worked out the classification at present in use in this country, and began the indexing of variety names. The booklets on Dahlias by Wilmore and Peacock—both pioneers of modern Dahlia culture, and still in the field—about complete the list of leading modern American works on this flower. Mrs. Stout, of Short Hills, N. J., now has in the press a comprehensive volume on the Dahlia. Of magazines that have lent valuable assistance in their pages to Dahlia culture, THE GARDEN MAGAZINE itself has taken the leading part through out its life.

II. THE DAHLIA'S APOTHEOSIS IN THE SUNSET STATE

ELIZABETH LYMBERY

A STORY of the Dahlia in California must be full of personalities—it must be nearly all personalities, for it is a history of a few enthusiastic people who in the past foresaw the possibilities of this stunning flower; they dreamed and they worked.

We in California think we lead the world in new introductions. On the whole our heads may be a little enlarged; but the East is featuring in catalogues and shows all the best this state produces. The most honest of us must admit that soil and climate have helped us materially. Our growing season is long, extending from March to December, and there are often blooms for the Christmas table. There are no summer rains to spoil the seeds.

Before the Federal Horticultural Board prevented the importing of foreign roots, the California growers spent their money generously in Great Britain, France, Holland, and Germany for new varieties. There was a friendly rivalry and every fellow wanted the best.

Probably the earliest professional grower in the field was the late Mr. E. Leedham of Santa Cruz. He began importing from Scotland more than twenty years ago and grew some of the first Cactus Dahlias in this state. Dahlias hitherto were all of the formal Show type. Mr. Leedham crossed the Show and Cactus and the result was excellent Decoratives, notable among them were: Santa Cruz, Bessie Boston, and Mrs. Alexander which are still being listed in the catalogues.

Perhaps the next man in the field was Mr. J. J. Broomall of Eagle Rock, Los Angeles. Mr. Broomall is the dean of the living growers and his seedlings are famous.

Then came Leslie E. Doolittle, who started in a small way in San Jose and gradually branched out and established the Del Monte Dahlia Gardens.

Mr. C. S. Quick of Berkeley devoted much time to Dahlias and after covering himself with glory went into another line of business.

Frank Pelicano, a San Francisco florist, fell in love with this colorful blossom and his window displays were most educational.

Richard Lohrmann of San Rafael gave a corner of his nursery field to them and his early introductions, as well as later ones, are most popular.

These were the growers of ten years ago when the writer arrived on the scene with her wizard co-worker, Osam Shudow, who, until his last hours, watched the destiny of the Farm.

THE Dahlia boom started at the Panama Pacific International Exposition in 1915. The grounds were aflame with this autumn glory, and the Horticultural Gardens contained little else but growing exhibits of the flower. There were also attractive tables of cut blooms in many of the buildings.

Two shows in the Horticultural Hall drew immense crowds. The first was given under the auspices of the California State Floral Society. This organization has held an annual complimentary Dahlia show for more than twenty years and has done more than its share to keep the public interested in the flower. The second exhibit was a National Flower Show staged by the

AS THE DAHLIAS GROW AT DEL MONTE, CAL.

Society of American Florists. Many varieties of flowers were shown but the Dahlia room drew the crowds from all over the world, who saw and marvelled and then wandered into the grounds, to be convinced that the plant bloomed in the open and was not a greenhouse product.

Two Dahlia societies were organized with large memberships the following spring, and each society issued a *Bulletin*, but they were finally combined under the name of the Dahlia Society of California. This organization gave two shows in the fall of 1916 in the ballrooms of the Palace and St. Francis hotels in San Francisco, and since then has given an annual show at the Palace Hotel. At this yearly exhibition California varieties are the principal feature. Special prizes are offered for them, and among these are three silver cups given by Mr. T. A. Burns, the first president of the Society, for the best twelve Californians. These prizes are divided among the professional, semi-professional, and amateur exhibitors.

The show averages a paid attendance of five thousand people who come from everywhere.

Though the flowers exhibited are principally of California origin, it must be admitted this Western state does not originate every type of Dahlia. For instance, we are weak on the Show type of which we have only two, General Haig and Maritana, of the highest quality. Also there

DAHLIA OSAM SHUDOW
(DECORATIVE)

This superb flower, shaded old rose, yellowish centre, honors the memory of a worthy worker in the California field

WHEN THE EAST WON HONORS IN THE WEST

Break O' Day (Hybrid Cactus Dahlia) grown by W. H. Shorey, an amateur of Seattle, won the sweepstakes at the First Annual Fall Flower and Dahlia Show at Leschi Park Pavilion, September 26th and 27th, as the best bloom in the show of more than 35,000 blooms. Being an Eastern variety, its success is testimony that Dahlias stand on an equal footing East and West

are only three Cactus of the English standard, Los Angeles, Amber Glow, and Ballet Girl, but there is an abundance of Decoratives, Peonies, Pompons, and Collarettes, and both Hybrid and American Cactus. Singles are not popular.

The term American Cactus must be explained. A new type of Cactus has sprung up. The bloom is too heavy in the petal to be exhibited among the English type and not coarse enough to be classified as a Hybrid, so a new classification has been adopted by the Dahlia Society of California. We all know the weak point of a true Cactus is its pendent stem. Well, the American variety must have an absolutely stiff stem. And speaking of stem, that is one of the strongest features of the California introductions.

A few words on size. Californians take pride in producing the biggest fruits and vegetables, so naturally have developed the biggest Dahlias. Personally, I rather deplore the fad for big flowers, and believe they are getting too big for beauty.

California growers have been criticized for their descriptions of colors and type. The facts are that true Peonies often assume a Decorative form in the East, and the color is

usually intensified in the warmer Eastern fall climate.

New shades are being originated every season which simply defy any color chart when it comes to describing them. Every shade under the sun, but blue, seems to have been developed and yet there is always some new combination of shades in the seedling patches.

PERHAPS the most appreciative compliment that Dahlias from this state have received was last spring, when the catalogue of Henry A. Dreer, Inc. among its eight select American Dahlias of recent introduction, listed six from California! And conservative England is cataloguing Western Dahlias! There are so many excellent varieties of California being grown all over the United States that one hesitates to prepare a list, and I prefer to give the names of some of the leading introducers as follows: J. J. Broomall, of Eagle Rock, Los Angeles; F. C. Burns and Richard Lohrmann of San Rafael; Mrs. Jessie L. Seal, Miss Aimee Hodgens, Frank D. Pelicano, Mrs. W. E. Estes, and Robt. McWhirter of San Francisco; Carl Salbach of Oakland; Leslie E. Doolittle of Del Monte; Mrs. Edna Spencer of Alameda; and Bessie Boston of San Mateo.

As has been said before, the growing season is exceedingly long, so the roots have time to ripen thoroughly before being dug. The storage of the clumps in this mild climate is simple. They are safe from frost as long as they are under some rough shelter.

ON A CALIFORNIA DAHLIA FARM
Such luxuriance of bloom meets the eye even up to Christmas!

IN CLOSING I can't resist telling the story of the most unusual Dahlia patch in the world—"The Garden Beautiful" of San Quentin prison. This is the prisoners' garden in a state penitentiary located near San Francisco. All flowers are grown there successfully in their season. Ugly stone and mortar walls are hidden by climbing Roses—but the favorite flower is the Dahlia. They grow it so wonderfully at San Quentin that their table at the Dahlia show is always the centre of attraction.

The Garden Beautiful was the idea of a prisoner, Pat Tyrone, as he was nicknamed, who is now free to enjoy the flowers outside. His name has been adopted for every head gardener, Roman numerals being added, so Pat Tyrone III is now directing this unique garden. Every plant grown has been donated by flower lovers. The members of the Dahlia Society of California each year send a gift box of their best and newest, and last spring an appeal was made to the American Dahlia Society members, who responded liberally.

All the donors are enrolled in the Abou ben Adhem Club and receive a Christmas greeting from Patrick Tyrone. The hopes of everybody, inside and outside, interested in The Garden Beautiful are that this big idea may become universal and in time the softening influence of flowers will be felt in all prisons throughout the country.

THE GARDEN BEAUTIFUL WITHIN PRISON WALLS

WHEN "Pat" Tyrone came to San Quentin, he found a sordid sort of a courtyard. Being an educated man, he realized the need of keeping active; he knew the elevating influence of the beautiful, the depressing effect of sordidness. Pat set out to solve the problem in a practical way. Thus we come by this story of a man's faith in an idea, a faith that removed mountains of obstacles and centuries of prejudice.

This was in the days when the world was held in the sway of the Great War. Food production was the paramount issue. Here was Pat's opportunity. The soil was there; combined with seeds, spare time and California's ideal climate, it was bound to do its share to feed the world. And so a patch of Cabbage and rows of Carrots, Lettuce and Beans, besides a few, very few, flowers sprang into existence within the walls of San Quentin prison near San Francisco.

Strange to say, their arrival marked an amazing change in the mental attitude of many prisoners. Pat, who by that time had earned the title of "Headgardener to the Inmates," had more applications for help than he had vacancies to be filled.

The end of the war brought a gradual change from interest in vegetable gardening to the greater desire to create a beautiful garden. Pat continued to scheme, and so was born The Garden Beautiful Idea, an idea that has since won the approval of every official of the state of California and has made San Quentin a model of its kind, where men have a chance to work out their own salvation under conditions creditable to enlightened civilization.

THE entire courtyard is laid out as a harmonious unit. There is a central motive in the form of a fountain and pool which face the Hospital. The walks pass through a score of individual gardens. There are Rose gardens, and Carnation gardens, a small formal garden, besides lawns, Pansy beds, avenues of Standard Roses, and some most symmetrical hedges.

Everything is conscientiously labeled. Beauty was combined with the practical; for what was the use of admiring a wonderful Rose or Carnation and not being able to tell its name. Weeds are "tabu" within San Quentin, because, in Pat's philosophy, weeds stand for evil, as indeed they do elsewhere.

Climatic conditions making a realization of The Garden Beautiful impossible without irrigation, ditches were provided in the Rose garden, among the Carnation beds, in short, wherever necessary. Stepping-stones and trellises, boarded walks and Rose arbors—with an ingenuity born of a great idea, Pat slowly but steadily worked toward perfection. The acquisition of some allegoric figures and vases, mounted upon appropriate pedestals, marked the final evolution from an enclosed yard to a garden creditable to any country estate.

WORK of this kind cannot go on, even behind prison walls, without finding recognition. In due time, The Garden Beautiful of San Quentin became known throughout the state, and even beyond. And the amazing part of it all is that everything accomplished was done without a cent of cost to the institution, other than the labor, which its officials have long since recognized as an enormously beneficial factor in the morale of the prison.

Besides being an idealist and practical gardener, Pat proved a good advertising man. All he needed was material with which to work. There was plenty of it outside of St. Quentin. To get it within, he founded an Abou ben Adhem Club.

Periodically some kindhearted visitor would send Pat some seeds, plants, or other garden material. These voluntary contributions were turned to good account. Pat asked, and secured permission to acknowledge such gifts with a most tastefully gotten-up certificate.

This certificate states that, because of a voluntary contribution to The Garden Beautiful and his, or her, charitable attitude toward fellowmen, the holder has been made an honorary member of the Abou ben Adhem Club of San Quentin. Printed in several colors and gold, on stiff board, it lends itself readily to framing.

And be it said that among its one hundred or so members are governors of states, merchant princes of America, the foremost horticulturists of the Golden State, besides many whose names are upon the rolls of America's foremost social and business clubs.

Pat Tyrone earned his reward. Before retiring from his able management of the country's most unique garden enterprise, the prison officials voted that, whoever the successor of Pat Tyrone, he should, in honor of the good work done by Pat The First, be willing to assume the name of Pat Tyrone for the duration of his service as head gardener. Pat Tyrone III is on the job. Let the good work go on!

[It is hardly possible to over-estimate the importance of this movement, whether looked at from the standpoint of the men within prison walls or of the larger group without. Anything that induces healthful physical activity, that stirs the desire to create beauty under conditions so adverse, means not only bodily and spiritual gain for the individual, but the enrichment of the world to which he returns a distinctly better type of citizen. To readers of Mr. Donald Lowrie's "My Life in Prison" this little article comes with special appeal.—Ed.]

THE TRANSFIGURED COURTYARD AT SAN QUENTIN

The crimson-flowered Eucalyptus (E. ficifolia) from the original tree on the Berkeley estate of Mr. I. N. Kierulff; over 20 ft. high. The most beautiful red-flowered species. The tree was grown from one of five seeds sent to Mr. Kierulff by Governor General Sir Herbert Chermside of Queensland, twenty-two years ago. Sir Herbert had seen the species in the Sultan's garden in Constantinople, when holding the position of Ambassador to Turkey. In Australia he noted forty varieties of Red Eucalyptus before discovering this particular species. The seeds were sent through Sir Herbert's sister-in-law, Miss Ethel Byron, who inherited Newstead Abbey, the historic seat of Lord Byron. In her journeys about the world collecting specimens of trees and shrubs, she visited California, and incidentally introduced the Crimson-flowered Eucalyptus

PICTURESQUE VALUES OF EUCALYPTUS

ALLISON MORRIS WOODMAN

Dept. of Horticulture, University of California

Australian Immigrants that Threaten to Overshadow Many of the Native Giants and Which Have Strikingly Individual Habits That Need Special Consideration When Planting for Landscape Effect

SEEN against the sky the Eucalyptus presents a pleasing silhouette and the growth of many species is so rapid that the trunk is bare of limbs for many feet. Although young trees are rather compact in their growth, well-developed specimens are usually open in character, irregular in outline, with leaves hanging vertically. The leaves vary from round or oval to sickle-shaped; the color varies from red to dark green with tones of gray and blue, often exhibiting a silver sheen on the lower surface. A slight breeze ruffling the leaves gives a shimmering, scintillating effect distinctive of the genus.

Being so unusual in appearance, Eucalyptus seldom can be successfully associated with other types of trees or shrubs, except occasionally as an accent note in a group. It is especially effective when several species are planted together.

The trunks of different species vary considerably in character, often forming one of the most interesting and distinctive features of the group. The bark of the Blue Gum (E. globulus), Sugar Gum (E. corynocalyx), Lemon-scented Gum (E. citriodora), Gray Gum, and Manna Gum, is deciduous, white, mottled from light brown to a cream or dark gray, and peels off in long strips or plates, leaving the smooth inner bark exposed beneath.

The appearance of a "moulting" Eucalyptus is very picturesque and striking, but such a condition has its disadvantages, too, especially when the trees are planted near highways. Other species have persistent bark, which is either smooth or corrugated; fortunately many are suitable for use as shade trees.

The leaves of juvenile forms are frequently quite different from the leaves of fully developed forms; likewise, some species will present as many as four or five different kinds of leaves upon the same tree! This peculiarity of leaf variation, combined with the rapid growth, has led to the assertion that ages ago the genus was represented by herbaceous forms, in all probability annuals, and that the present forms of growth are adaptations because of a new environment.

NATIVE of Australasia and adjacent islands, including Tasmania, New Guinea, and islands in the Malayan region, the genus attains its greatest height in Australia, and several beautiful species are said to be among the largest and tallest trees.

The Blue Gum (E. globulus) was introduced into Europe through the Mediterranean region in the early part of the nineteenth century by Baron von Mueller, then Director of the Botanic Gardens of Melbourne, Australia, and author of a valuable treatise on the genus. Many other species are now known and from its first place the genus spread into India, Southern Asia, and South Africa, and is now extensively grown in Spain, Algeria, Cape Colony, Italy, and Portugal. Being quite sensitive to extreme cold and sudden changes in the weather, the genus in America is confined to California, and small portions of Arizona, New Mexico, the Gulf States, and Mexico.

Eucalyptus were grown in California as early as 1853 by a Mr. Walker of San Francisco. Later, in 1858, Mr. C. L. Reimer introduced fourteen species. In 1860, Mr. Stephen Nolan, a pioneer nurseryman of Oakland, grew Eucalyptus for the trade. But the most efficient distribution of the genus hinges about the work of the Santa Monica Station, southern California, where over seventy species are now grown. During the administration of Mr. Abbott Kinney of Los Angeles, Chairman of the State Board of Forestry from 1886-1888, many thousands of trees, mostly the Blue Gum, were distributed throughout the state.

There are species adapted to meet every exigency of California's diversity of soil and climate except conditions prevailing in mountainous and very cold regions. Naturally at home, in fog-ridden belts along the coast, many species do well in the interior valleys. These include the Blue Gum, Red Gum (E rostrata), Gray Gum (E. tereticornis), Manna Gum (E. viminalis), Broad-leafed Ironbark (E. siderophloia), Swamp Mahogany (E. robusta).

THE term Eucalyptus, of Greek derivation, means to cover (kalypto) well (eu), as with a lid. The petals and sepals are joined to form a cap or lid, enclosing the stamens and pistils. As the bud develops the cap separates from the calyx-tube, the stamens protruding, giving the inflorescence a fluffy appearance. The flowers are arranged in umbels, either sessile or with pedicels, and range in color from white, pink to scarlet, rarely yellow. Frequently, buds, flowers, and fruit, in various stages of development, can be seen on the same branch, giving a very pleasing aspect to the tree. By a proper selection of varieties it is possible to have a succession of bloom the year round.

The Eucalyptus has long been used for the making of railroad ties, furnishes good fuel, is excellent for railroad coach and hardwood furnishings, for farm and other implements, telephone poles, bridge lumber, insulator pins, wheelwright work, flooring, tool-handles. The wood of some species is beautifully grained and takes a good polish (my own home is furnished with panels of Eucalyptus wood which is the admiration of all our friends). Resin is a valuable product; an antiseptic oil is distilled from the leaves and twigs of a few species already noted. The Eucalyptus, because of its ability to absorb great quantities of water, is a valuable tree to plant in swampy land to eliminate malarial conditions. Mention may also be made of the value of many species as bee pasturage, the calyx cups supplying a very sweet nectar. The bee industry is rapidly assuming an important place in California, and the Eucalyptus plays no mean part in aiding this industry.

Considered from any angle of its diversified character—rapidity of growth; durability and hardness of the wood of many species; the extraordinary number of uses to which the wood may be put; the sturdiness and picturesqueness, or grace and elegance of the ornamental species; the medicinal properties of the leaves of the Blue Gum; the health-giving properties of a mass of the trees—the Eucalyptus is one of the most important plant families in the world.

BLUE GUM (Eucalyptus globulus)

At the bend of a road. The characteristic stripping of the bark, leaving the naked trunk is clearly shown

THE RED GUM (E. rostrata)

Commercially and ornamentally an important Eucalyptus. Leaves and trunk vary in character; and the tree tends to assume a very crooked shape

It is estimated that there are some 300 species in the genus, but a few serve as types of certain groups. Some have been grown in California for many years; others have not been tried out to any extent, but all are probably adapted to certain kinds of conditions.

The Blue Gum is probably the most interesting and important species. It is what might be termed an all-around-tree, because of its versatile character. It is a tall, fast-growing tree, sometimes reaching a height of 300 feet in Australia. The trunk is very straight, the bark peeling off in long strips. The leaves of the young trees are broad and a light, bluish-green in color; those of the old trees are narrow and very much elongated, sickle-shaped, leathery, often a foot in length. The inflorescence is white. The tree is adapted to a variety of conditions, enduring extremes of temperature. Young seedlings are popular greenhouse plants in Europe, and in the Eastern States to some degree, and are favorities for sub-tropical bedding in parks etc.

There is a dwarf form, called E. compacta, originating as a sport on the grounds of the California Nursery Company at Niles. The tree is symmetrical and compact in habit and densely branched. The leaves are broad and white-mealy.

The forms having brilliant red blooms are attractive to most people. The bloom lasts but for a short period, 'tis true, but is

very striking. The Scarlet-flowering Gum (E. ficifolia) is a slow-growing, dwarf form with very large and showy flowers, colored red, pink, or orange. It is a good avenue tree, resisting drought and heat. E. macrocarpa, a stout shrub grown in southern California has brilliant orange or crimson flowers. The foliage is powdery; the bark is deciduous in long strips, leaving a smooth, grayish or bluish-white bark beneath. The species E. sideroxylon var. rosea has rose-colored flowers. E. tetraptera has brilliant crimson flowers.

The Red Gum (E. rostrata) is very extensively grown in California, both for commercial and ornamental purposes. It is another specimen of a good all-around tree, is drought resistant, and can endure extremes of temperature. Both the leaves and the bark are variable in character. Another favorite, both for use as a shade tree and as a windbreak, is the so-called Bastard Mahogany (E. botryoides) tall-growing, with a rough, furrowed, semi-persistent, reddish-brown bark, and lance-shaped, leathery leaves.

Some forms are very loosely arranged with drooping branches and narrow leaves that fairly seem to dance in the sunlight. The Manna Gum (E. viminalis) is one of the most interesting trees in this group. The trunk varies in character, being either persistent, roughish and dark, or deciduous, very smooth, grayish-white. Peppermint Gum (E. amygdalina angustifolia) is a graceful, spreading tree, with very narrow, light-green leaves and white flowers. The Apple-scented Gum (E. Stuartiana) is very similar to viminalis, but has a fibrous bark. Spear-wood (E. doratoxylon), is a small tree with smooth, grayish-white bark and narrowly lanceolate leaves. E. Risdonii is a form with drooping branches and glaucous foliage and the bark tends to flake off in small strips. E. punctata is a tall-growing tree with thin, lanceolate leaves. E. regnans is a pendulous form with very narrow leaves.

Sweet-scented leaves occur in some trees of which the chief is the Lemon-scented Gum (E. maculata citriodora). This has the habit of shedding its bark during the blooming period, leaving the smooth, white bark beneath. The flowers are a creamy white. Quite sensitive to frost, it is to be looked for in the warmer parts of southern California. A clear white oil extracted from the leaves is used as a perfume for soaps. Young plants are sometimes set near windows or in greenhouses. The Apple-scented Gum has fragrant leaves also.

Having noticeably broad leaves, the Swamp Mahogany (E. robusta) is a handsome tree with its rough, dark-brown, persistent bark, and thick, leathery, shiny, dark-green, oval to lanceolate leaves and cream-colored flowers. Red Box, or Australia Beech as it is sometimes called (E. polyanthemos), is interesting both because of the rather small, bluish-green, oval-shaped leaves, and the light gray, persistent, fibrous and rough bark. The persistent, grayish and somewhat wrinkled bark of the trunk, and the deciduous character of the bark of the branches, peeling off in long strips, distinguishes the Australian Gray Box (E. hemiphloia).

E. Lehmannii is a small-sized ornamental with a rough and reddish bark, peeling off in long, irregular strips. The Forest Gray Gum (E. tereticornis) makes a very erect-growing tree with a smooth and grayish bark that flakes off in thin layers; the pendulous character of the branches gives a "weeping" effect to the tree.

E. calophylla is a medium-sized tree similar to E. ficifolia, with a dark, corky, deeply furrowed bark, ovate to lanceolate leaves, and white, cream, or even pink flowers—a good avenue tree along the coast, and furnishes a good pasture for bees. Another avenue tree, grown considerably in southern California where it is not subject to frost injury, is the Sugar Gum (E. corynocalyx) the bark of which is scaly, and varies in color from a cream to a dark gray. The leaves are quite variable in form, while the branches and twigs vary in color from a red to a light green.

Desert Gum (E. rudis) with dark-gray, rough-furrowed, persistent bark, is used both as an avenue tree and as a windbreak. E. coccifera is a small ornamental with glaucous, thick, and shining leaves, and smooth, white bark. E. alpina, characterized by very short leaves and white flowers, is a shrub-like form used for planting along avenues.

Yate (E. cornuta) is a low-branched, spreading tree, tolerating alkali. It is frequently planted along roadsides. For the interior valleys E. cebra is an important species; it possesses a rough, persistent, light gray bark, and long, narrow, dark green leaves which lend a sort of a weeping effect to the tree.

A TWILIGHT SILHOUETTE ON SAN FRANCISCO BAY
Young saplings of Blue Gum

Conveniently apart from the residence is Mr. Cobb's study, wherein he works in an environment of nature. The rippling brook's banks are planted naturalistically with native Rhododendron and Ferns and Japanese Mountain Spurge

Wisteria enframes the entrance arch lending a touch of graceful welcome. On the right each pillar is fronted with Regel's Privet, giving blue-gray berries in winter to harmonize with the stonework, and under each window the low habited Rhododendron Boule de Neige. Pachysandra as a ground cover. On the left, Hybrid Rhododendrons and native Dogwoods, leading into Chrysanthemums and Ferns

The Gardens at "Rebel Ridge"

Home of IRVIN S. COBB Westchester County, N. Y.

Clarence Fowler
Landscape Architect

Photographs by Harry G. Healy

THREE miles or so from the village of Ossining, Irvin S. Cobb, entertaining tickler of the popular risibles, makes his home in the midst of fifty-odd acres of smiling meadow and woodland of Westchester County, N. Y.

Charmingly placed on a hillside, the house (designed by W. G. Massarene) overlooks these rolling acres and the distant spires of Ossining reaching up from the valley of the Hudson. A few steps up from the drive the visitor passes under a picturesque stone arch draped with Wisteria and follows the paved walk across a grass terrace to the front door.

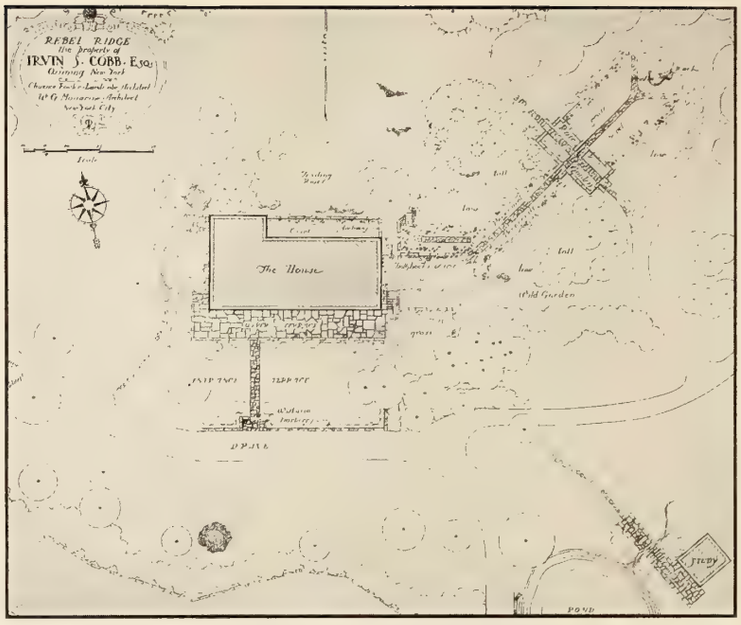
A great Elm on the west and a group of large Spruce and Hemlock opposite so amply shade the terrace that the

Here the bloom of gray blue Iris pallida dalmatica and pink Petunia Rosy Morn lend their lightsome gaiety. On the wall edge are lilac and white forms of Moss-pink with Pfitzer Juniper giving evergreen effect. A Japan Cypress, feathery and soft textured, supports the projecting house line. Elms beyond

On this rocky ledge, with ample soil depth filling the crevices, is a strangely vigorous growth (in such a setting) of border perennials—Shasta Daisy, Larkspur, etc. with trailing Roses

garden was perforce placed on the hillside above where there is plenty of sunshine; thus enabling Mrs. Cobb, whose window looks out upon the garden, to enjoy a feast of lavender, purple, and pale blue bloom—her favorite colors.

No planting of any importance was attempted in front of the dwelling except the necessary minimum to soften architectural lines. A garden of flowering shrubs and the view of rolling meadows, framed on either side by fine old woods, seemed best left unobscured and unspoiled by elaboration.



The hillside position of the house made several levels possible, all of which have been used to advantage. Entering by a door on the terrace level and going up a flight, one looks across a narrow court supported by a rough stone retaining wall to a bank of trailing Roses, flanked by flowering shrubs and dwarf trees with the wooded hillside as a background; turning, one gets a charming view of the rocky, garden-treated ledge framed by a brick arch.

From the south corner opposite the house you look down a wide grass walk with the great Hemlocks and Spruces on one side, the bank on the other having been planted with native Dogwood and Judas trees for which Azaleas and other flowering shrubs make a pleasing foreground. Winding paths of native stone lead into the rock garden where many of the favorite old perennials grow as luxuriantly as in a border planting, and from the crannies of the steps spring little Moss-pinks, Dianthus deltoides, pale blue Flax (Linum perenne), and their kin.

Following the flight of steps up from the paved terrace in front of the house the visitor comes upon a grass court, whence a little path meanders through a blue-starred carpet of Vinca under the spicy shelter of big evergreens to the small, friendly building known as Mr. Cobb's "study," which perches above a clear natural pool fed by springs and fringed with Ferns and native Rhododendron.

Wherever feasible, native material was used to carry out the naturalistic effects—Dogwood, Azalea, Laurel, Fern, each contributing to a harmonious total—the nursery call of conventional evergreens was at first strong with the Cobbs but, happily, better counsels prevailed.

A SPANISH BORDER FOR CALIFORNIA GARDENS

SYDNEY B. MITCHELL

Suggestions for a Brilliant Border Which May Also be Adapted to Many Other Sections

EDITORS' NOTE: Despite the variability of climatic conditions in different sections of the United States many plants seem to ignore these differences and to thrive almost anywhere. In consequence, Mr. Mitchell's scheme for a Spanish border is, in the main, equally applicable in the East where much of the suggested material is also commonly grown. The gardener who loves brilliancy of effect will appreciate the possibilities of this vivid, old-world color combination.

THE reminders that California was once a Spanish colony are now not many. A few old missions, considerably more old adobe houses of unquestionable attraction, and many beautiful names are nearly all we very evidently have left. But there is a sentimental looking back toward the old days, and in architecture their influence is becoming quite marked in such sections as Santa Barbara. When there are celebrations, as that of the Portola discovery of San Francisco Bay, the decorations take on a strong red and yellow character.

This warm combination is the basis of the flower border which I have here planned; for some time I have had such a border in my small garden, varied from year to year so that I might try new things. It has found much favor with visitors, both for its inherent attractive brightness and for its Spanish association.

As given, the planting would cover a long, wide border having at the rear shrubs of considerable size and even a few trees, but if the space were narrow the background of shrubs could be eliminated and only the sub-shrubby, herbaceous, and bulbous plants used. The whole plan is intended to be suggestive rather than a literal planting scheme, for doubtless not all the plants will be available in any one garden and for some, excellent substitutes may be found. I have made no effort to mention all the possible materials. Some were omitted because too vigorous or spreading; such are the Acacias, the Perennial Sunflowers, and the Verbascums. Spanish Irises, Ixias, and the rarer bulbous flowers which cannot now be imported because of Quarantine No. 37 I have little used as the supplies in this country are still very small. Many annuals might have been added, as Nasturtiums, Annual Chrysanthemums, Stocks, Sweet William, Celsias, and such natives as Layia elegans and Leptosyne Stillmani.

A PLANTING of the type suggested would be best facing south. In that position not only would all the one-sided flowers such as Gladiolus face the path, but the border would have practically continual sunshine, a necessary factor to bring out the warm coloring and give the brilliant effect sought. For that reason such shade lovers as Lilies and Primroses have not been included in the scheme. The planting would be best on level ground because the effects are planned to extend through the garden year and on a slope it is hard to have a good summer show because the ground dries out in spite of irrigation.

It will be noted that I have not restricted myself to crude

combinations of red and yellow only. White, cream, yellow, apricot, scarlet, bronze, and brown are used in the scheme and the wider range greatly softens and improves the effect.

In the shrubby background the high points are given by Eucalyptus ficifolia, a species quite different from most in that it is dwarfer and slow growing. In August the best forms are a blaze of orange-scarlet. The shrubs are selected for their resistance to drought, varied texture of evergreen foliage, and conspicuous flowers or berries in the color range desired. The taller ones are in most cases the rearmost, and the somewhat shorter and less vigorous ones are used as facers. Between them they furnish some color all year. For example, Choisya ternata, Kerria japonica, Berberis Darwinii, and Chorizema are in flower from late January through February; Leptospermum, Cytisus Andreanus, Cytisus albus (white Broom), Streptosolon, the Cistuses, and Diosma ericoides through the spring; Carpenteria californica, Lupinus arborea, Fremontia californica in early summer. For midsummer Spanish Broom, Escallonias, Cestrum aurantiacum, and the Lantanas must be depended on, while through the fall we have the orange berries of Pyracantha angustifolia, which are generally retained for months. For none of these is any special culture required. Planting should all be done during the rainy season. The Streptosolon, Lantanas, and Linum trigynum should only be used where there is little frost.

The front would be best edged informally with rather flat stones over which the rock plants could clamber. Most of those listed are hardy perennials able to stand our dry summers. Cheiranthus Allioni is a beautiful orange relative of the Wallflower, best sown in summer and treated as a biennial, that is, allowed to bloom itself to death next spring. With good drainage the Verbenas and the Indian Pink Vesuvius are perennials, albeit requiring occasional replacing. A few spring-flowering Cape bulbs such as Freesias and Sparaxis have been added. They require fall planting and may be left in the ground throughout the year. To keep up the procession Violas (planted in autumn) and certain summer-flowering annuals such as the dwarfer Eschscholtzias, Dimorphotheca hybrids, dwarf Marigolds, and Calliopsis are necessary. They may be sown in early spring where they are to bloom, and will require summer watering and to be kept from going to seed.

BETWEEN the edging and the shrubby background will be found the hardy perennials, annuals, and bulbous plants which are depended on to give the strong color effects. In the early months of the year Daffodils and Tulips are the chief contributors. The bare spaces they leave when planted alone are a grave problem anywhere, but especially so here. With pains and thought the spaces can, however, be eliminated. Daffodils, flowering in February or March, may be interplanted with Ixias blooming in April or May, and among them a summer-flowering annual may be sown in spring. So Spanish Iris may follow Tulips, and similarly an annual follow them. In both cases the later flowering bulb is planted only two or three inches deep, between the Daffodils or Tulips which will be five or six inches underground. To this middle planting the chief character all through the spring will be given by the long blooming Wallflowers. Fire King is a particularly brilliant variety, the others are good for contrast and diversity.

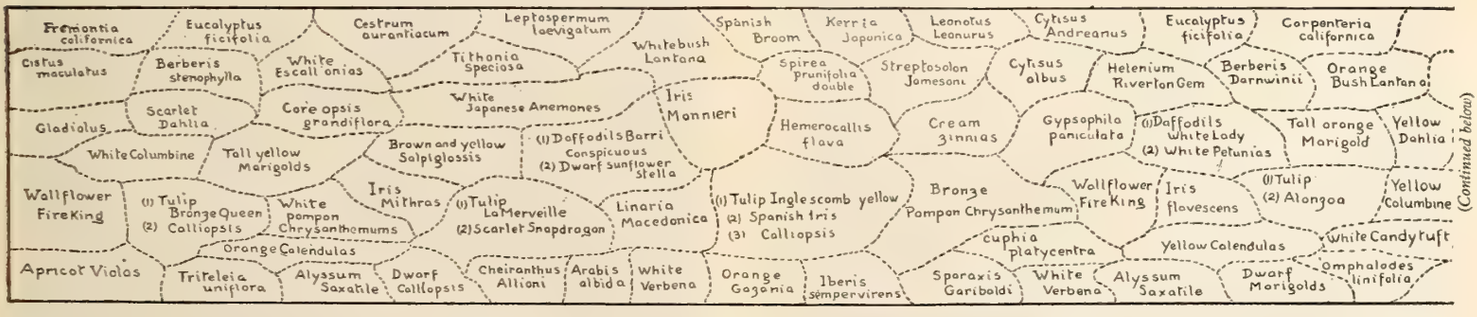
To the April and May effect the tall Bearded Irises, Oriental Poppies, Columbines, Hemerocallis, Geums and Linarias contribute. Irises Monnieri and ochroleuca are taller, later-blooming varieties of the Spuria section with fine stiff foliage.

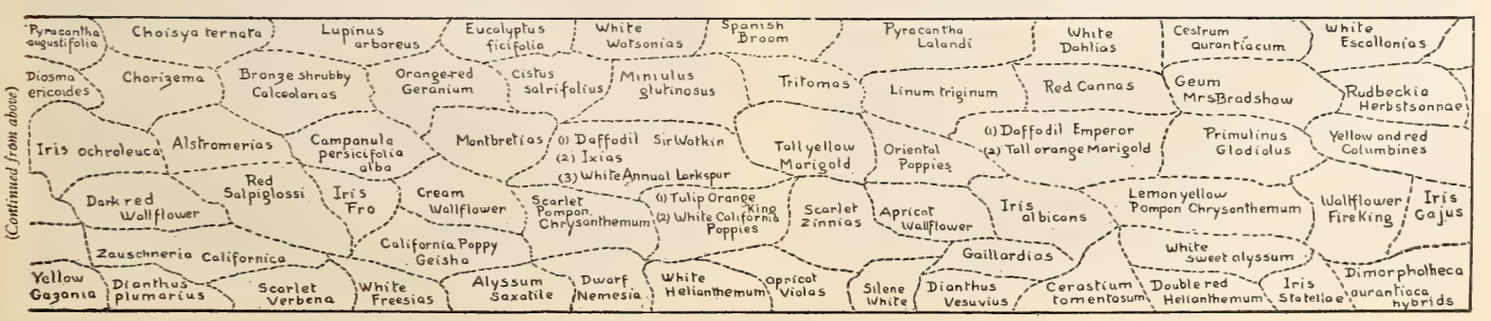
In early summer are added Coreopsis, Gaillardias, Alstromerias, and for later summer display we have the various annuals, Gladiolus, Montbretias, Tritomas, and the members of the Sunflower family. A particularly strong color note at this season is Leonotus leonurus, the so-called Lion's-ear, a tall sub-shrubby plant with striking orange flowers in whorls.

The main dependance in autumn is on Pompon Chrysanthemums, which for this purpose are far better than the large-flowered ones, as they need no staking. They can, if desired, be treated as hardy perennials and simply cut back in April and June to keep them dwarf. This is the easiest way, but if the ground is needed for something else in spring the clumps can be planted out of the way after blooming and offsets put into the border again in May.

Perhaps the effect most pleasing in this border is the softening down given to the larger flowers in spring by the annual Linarias which for months bloom among the other plants. Seeds of the annual white, yellow, and yellow-and-red varieties sow themselves and have been so crossed by the bees that there are now dozens of delightful combinations which in the sunshine glisten like jewels.

In this arrangement it will be noted that no attempt has been made to restrict the border to hardy herbaceous perennials. Under California conditions such restriction would be quite inadvisable even if possible, for with a season extending almost twelve months one must take advantage of all available materials. In any case, distinctions are to some extent eliminated in a climate where Calceolarias, Cannas, and Montbretias can be left outdoors throughout the year, Eschscholtzias and Wallflowers are perennials, and Salpiglossis and Indian Pinks at least biennials.





MY LOS ANGELES SUBURBAN GARDEN

W. J. GHENT

The Personal Account of an Amateur Enthusiast's Recreations on a 40 x 150 ft. Plot where the Garden is a Pleasure Spot with Flowers a-riot and a Rich Variety of Luscious Fruits Ripen in their Season

THE Easterner who plants a garden in southern California will need to forget much of the lore he learned back home and to start all over again. The differences between the two sections are many and notable. What first strikes him is the topsy-turvy calendar. He sees the russet and brown of summer on the hills and rolling stretches turn to a luxuriant green with the first rains of November. He sees the Loquat blossoming in the late fall and fruiting in the early spring; Oranges ripening in January; Sweet-peas planted in August in order that the gardener may have blooms for his Christmas table; bulbs put in from October to December, and Pansies, Marigolds, Callas, and other flowers blossoming throughout the winter. He finds on every hand the evidences of a hospitable clime which fosters not only the sub-tropical growths of its own, but many of the growths of northern zones and some of those of the tropics. He discovers a vast field of contrasts to what he has known, and he must shape anew his art and science of cultivation.

Nature will be kind to him, however, and turn even his mistakes to advantage. The local boast that anything stuck into the ground and watered will grow, is a bit extreme; and yet this California sun works what to the newcomer are miracles and blesses even blundering with a fortunate outcome.

MY OWN garden is the result of work—shall I say pottering?—at odd hours, and cultivation by rule of thumb. Not that I do not read the books and the articles—some of them—and give full faith and credence to their precepts of scientific gardening. I do. I should read more of them and more sedulously follow their precepts if I had the time. But most of my day must be spent at the desk. Gardening can thus be for me no more than a fascinating avocation. The early morning and the late afternoon are usually all I can give to it. Yet even so, the rules and counsels, though framed for this specific region, cover but a part of my problems. For many of my queries I find no answer on the printed page. I learn most by observation and experiment.

IT ISN'T a large garden of which I write. What there is of it is comprised within the boundaries of an ordinary city lot, 47 x 147 ft. The house, the summer-house, stretches of lawn, both front and rear, fruit trees, turfed paths (perhaps too many and some of them too wide) take up much of this area. What's left is garden.

Except for the fruit trees, it is not, at least in the narrower sense, utilitarian. No vegetable grows in it. All the available space is given to flowers, vines, and ornamental shrubs. Most of the larger growths were set out by the former owner. But then the place went to a long succession of tenants, during whose occupancy great heaps of refuse accumulated, making a sorry picture of disorder and neglect. When we moved in, the work of renovation at once began, and the vast deposits of junk, ashes, broken glass, shoes, rags and tinware were gradually cleared away. Into the redeemed spaces I have thickly crowded the sort of growths that we care most to have about us. True, there is a somewhat bewildering variety. But we want it so. The clime is, as I have said, a hospitable one, and the garden is representative. The Banana, the Avocado and the Cocos plumosa of the tropics touch tips with the Broom of Scotland; the Peach, the Plum, the Apricot and the Concord Grape of the North are neighbors with the Fig, the Loquat, and the Lemon of the South.

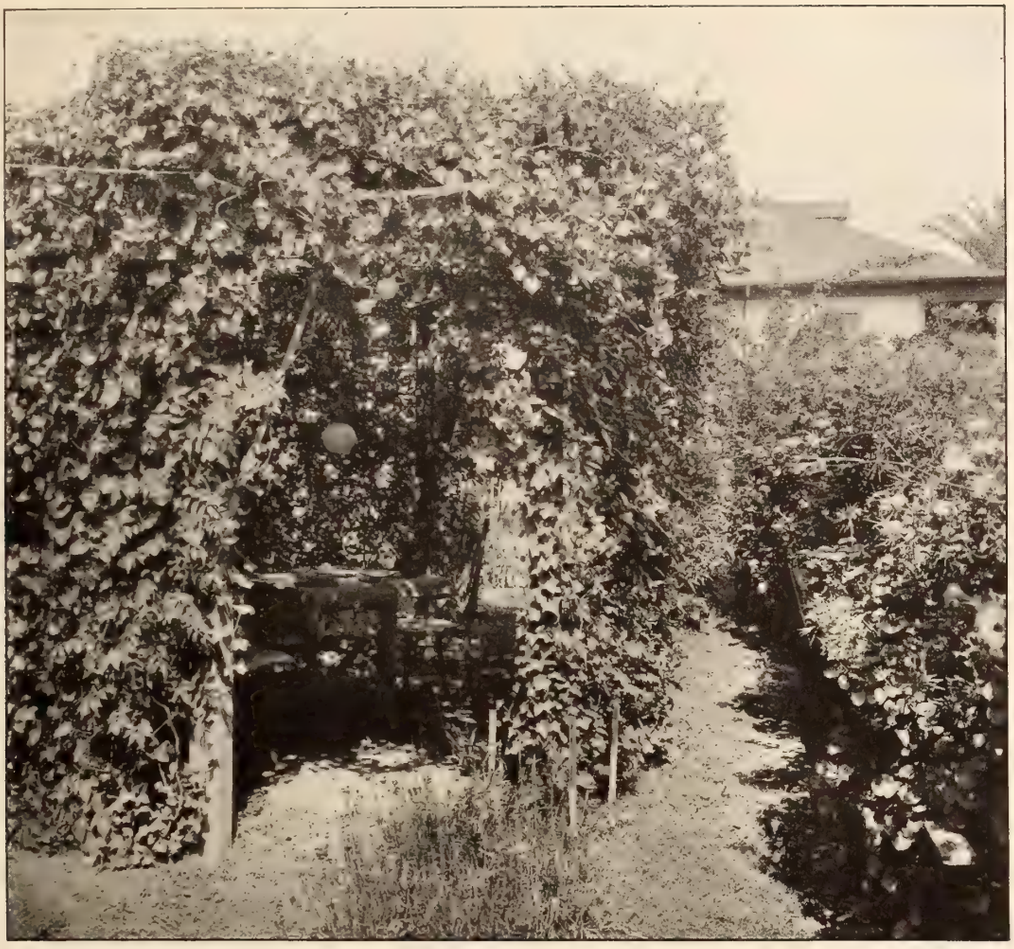
Too thickly crowded, some might say. But I reject the criticism. The arrangement has all been thought out, and everything has been placed with an eye to symmetry and general effect. From time to time the plan has been slightly altered, necessitating some shiftings and new plantings. But each particular has been determined with regard to the whole. The crowding I admit; but not an over-crowding. The plan is coherent, whatever verdict might come from a landscape gardener.

The transformation has not been without its special difficulties. In the first place, the soil, in its natural state, is unfriendly. In the level sections of the city the surface is a powdery silt. But this is the hill section, and our soil is what we call black 'dobe, though the experts insist that its color is really brown. However that may be, one fact is clear: it is dreadful stuff. It ranges in consistency from a thin glue, when saturated, to an india-rubber, when desiccated. And yet it is amenable stuff. Lime, ashes, sand, compost, shavings, sawdust—all in their several ways help to break down its original stubbornness and render it workable. Moreover, it is usually fertile, and when properly prepared gives surprising results.

THIS is not all. Of bitey and blighty things in the garden we have our full share—and more. Perhaps our mild climate enables them to thrive more vigorously and persistently than in the colder North. Aphids are usually—except in midsummer—a daily worry; and a more or less constant campaign must be kept up against slugs, snails, cucumber beetles, scale and other pests. At its appropriate season comes peach-leaf curl; while mildew, rust, and yellow blight must recurrently be fought. Still, a little alertness and industry enables one to keep them under a measurable degree of control. But a pest which apparently defies efforts to exterminate is one of a different category. That is the Ailanthus, or Chinese Sumach. The former owner had set out a shoot of it, which quickly grew into a clump of stately trees. But the roots insisted on monopolizing the ground for a wide radius from the centre, and so the clump was cut out. Then the real trouble began; for each severed root, denied the function of contributing to the growth of the main stems, began forming new root nodules and sending up fresh shoots. As fast as they appear, these shoots must be dug up. But are the remaining roots discouraged? Not that I can discover. They are only stimulated to greater activity. Like moles they race through the soil, and every day a new head peers forth from somewhere within a forty-foot radius of the old-time clump. The Chinese may call the Ailanthus the "tree of heaven," but in this neighborhood the title is regarded as a woeful misnomer.

THE house faces east. The front lawn is divided midway by a walk. The north half is clear, giving a wide view of an amphitheatre of hills, with a tiny lake in the foreground and a mountain range (the Sierra Madre) in the distance. In the centre of the south half is a stately Cocos plumosa. The front porch is graced by a riotous tangle of Honeysuckle and festooned at the top with a branch of Banksia Rose running from the great trunk (do Roses in the East ever have trunks?) against the north side of the house. The front and side margins are planted with a variety of perennials; a few annuals; some Roses, including a second Banksia; a Scotch Broom; a tall and spreading Spanish Broom; a wall Peach (which probably is dying); a Cassia floribunda, and a couple of small Magueys.

In the rear are the summer-house—covered with Honeysuckle,



THE SUMMER-HOUSE SHADED WITH HONEYSUCKLE, COBEA, AND IVY

PENTSTEMON ROW FLANKED BY FUCHSIA

FLOURISHING FRUIT TREES JOSTLE ELBOWS

Cobea, English Ivy, and the thing known as German Ivy—fruit trees, Grape and Blackberry vines, a clump of tall Broom grass, some Bamboo (rather diminutive as yet), a Rose path, and the garden proper. It is all turfed, except for the irrigating basins at each tree. The fruit trees, in the main, violate the rule about "keeping a proper distance." The three Fig trees, a Cherry Plum, and a wild Plum (grafted with several varieties) are scandalously close. More appropriate distances separate from these and from one another the Satsuma Plum, the Crawford Peach, the Prune, four Citrus trees, and the Loquat. A second Spanish Broom (a thriving youngster), a five-year-old Lemon Verbena and a small Guava also find a footing in this space. At one corner is an Apricot and at the other a young Banana (my particular joy), which is showing astonishing progress. Two other juveniles, but with indifferent records, are an Almond and an Avocado. My Citrus trees have so far been a failure. They detest adobe soil, and no amount of manipulating and lightening it conquers their prejudice.

ROSES have here a double season—March-June and October-December. Some forty varieties find lodgment in this garden. The most vigorous and dependable (aside from those irrepressible climbers, Banksia, Dorothy Perkins and American Pillar) is the pink Maman Cochet, though Marie von Houtte, Frau Karl Druschki, and Madame Abel Chatenay run it a close race. For sheer beauty the gem of the collection is Madame Edouard Herriott. Hadley, Lady Hillingdon and Mrs. Aaron Ward, each so distinctively beautiful, are worthy rivals; Juliet, when it develops perfectly, and Mad. Abel Chatenay are close contenders for the prize; but after all their claims are duly considered, the verdict invariably goes back to Herriott. A charming Rose which I must take space to mention is the Marquis de Querhonts* (I wonder at the name, for I have never seen it elsewhere than on the tag of the root I bought several years ago). It is of the Gold of Ophir pattern, and the bush that produces it is as faithful, hardworking, and dependable as any plant in our garden.

OF THE perennials nothing makes so beautiful a show as the Delphinium, with its tall spikes of sky blue. Like the Roses, it has a double season; and so responsive is it to a little care that I imagine some fostering might bring it to a third flowering. Pentstemon, Coreopsis, and Carnation are vigorous and prolific. Stocks (supposed in the East to be annuals) last for several years, and if the seed pods are constantly removed will keep right on blooming. Much the same is true of the Marigold. Though the Pansy dies out after a season, the Violet keeps right on, winter and summer, and blooms for considerably more than half the year.

With Dahlias and Chrysanthemums (though I cannot spare time to attempt the big prize-winning growths) I have results which are satisfactory—an abundance of fair-sized bloom. The annual Calliopsis, Scabious, and Cosmos grow like weeds in a barnyard and blossom profusely. The Salpiglossis does well; one of mine lasted through the winter and came into the next summer covered with blossoms. My Zinnias and Asters would not take a prize at a flower show, but they are wonderful all the same and quite up to the tests laid down for amateur gardeners. Balsam grows luxuriantly. Some Goldenrod, which I put in to remind me of regions far away, thrives to the extent that it encroaches on its neighbors, so that from time to time the invasive roots must be chopped away.

*Marquise de Querhoent (T)—this is the correct name—was introduced in 1901 by the French grower, Godard, of Thoissey; it is described as having flowers "rose shaded with gold.—ED.

AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME

WHO of us does not talk about and speculate upon climate and weather, praising or condemning as they chance to please or disappoint us at the moment; and how especially do these things affect the gardener. And yet how many among gardeners even have an intelligent understanding of what climate really is, what it means, what it does? We convince ourselves that "the climate is changing"—although centuries of scientific data provide evidence to the contrary; we formulate sweeping generalizations on a basis of an occasional, or specific instance, we rail against climatic opposition in our gardening operations when we could perfectly well have anticipated and prepared for it; we continually strive to introduce and cultivate species inherently unsuited to the conditions that surround us and them—and put the blame on the climate!

As a matter of fact, it is actually awe-inspiring to peer into the larger aspect of climate and observe how vast a part it plays in shaping our destinies. Climatic environment affects us in many ways, our clothing, dwellings, food, occupations, and customs; systems of government; our migrations. Climate often determines how and where we shall live.

As to the temporary variations of the weather—which, in the aggregate, constitute climate—no day passes without supplying countless striking illustrations of their influence over everything we do.

How much greater and more vital must be the effects of climate and weather upon members of the plant kingdom, who cannot, like man, move swiftly from place to place, and modify their surroundings. The problem of the plant in its struggle with its environment is such as to completely overshadow ours; the balance and relationship 'twixt crops and climate in their scope and complexity are indeed a revelation.

Nowhere is this truer than in the United States. Nowhere is nature more lavish in her distribution of varied climate: kinder when she is kind, harsher when she is harsh. This is because continental United States lies wholly within the temperate zone, extending, however, from its northern to its southern limits. "A marked changeableness of the weather is a striking characteristic of these zones," says Ward, a recognized authority. And elsewhere: "The continental interiors of the north temperate zone have the greatest (climatic) extremes in the world." With its wide north and south expanse, its sweep from ocean to ocean and its distinctive topographic features, the United States exhibits in its different regions all of the four great types of possible climate.

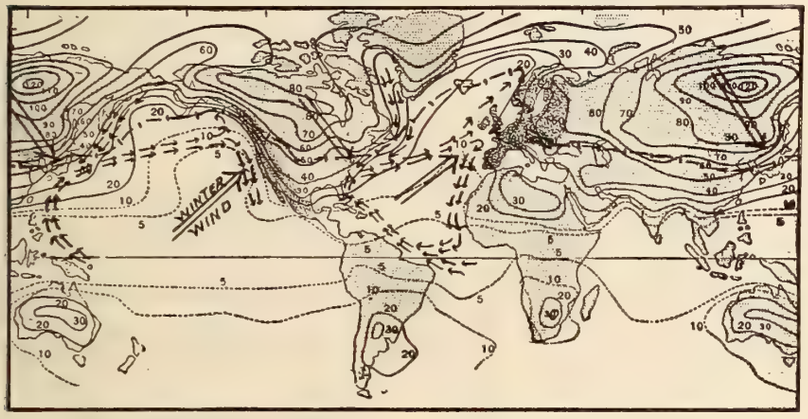
1.—A western coast climate, extending between the Pacific Ocean and the coastal ranges and corresponding in all its essentials with that of the west coast country of Europe, with prevailing westerly winds causing a low annual or seasonal range in temperature and warm ocean currents sweeping up from the south to temper the winter winds and create—as far north as Oregon and Vancouver (and in Europe, northern Britain)—mild, moist winter conditions favorable to plant life. These westerly winds bring abundant moisture, which falls in the form of heavy winter rains.

This is the explanation of California's famed climatic bounty, and why it is possible to grow within the boundaries of that one state a miscellany of plants native to all parts of the globe.

Unequalled in its horticultural resources is that stretch of Pacific borderland closely resembling the climate of western Europe, and destined to become the greatest garden region of our vast land.

2.—A continental interior climate, which commences abruptly with the crossing of the lofty western mountain barrier, severely cold in winter, excessively hot in summer; at any season constantly interrupted by storms, droughts, floods, and sharp extremes following one another without warning; and an annual range of temperature far greater than for corresponding latitudes on the western coast—with summer rains chiefly, though they are few; and a daily temperature range, like that for the year, great and often trying to all manner of life.

3.—An eastern coast climate, really a modified form of the preceding, where prevailing winds coming overland create far greater variations—both seasonal and temporary—than occur in California, Oregon, Scotland, Holland, etc., despite the modifying effects of the ocean. Along the coast proper the relatively mild but unsettled winters are due largely to occasional easterly winds from off the Gulf Stream; but this current soon veers across the Atlantic to warm the shores of northern Europe, leaving New England and corresponding latitudes to the none too tender mercies of blasts from inland. This region is humid, with a fairly well distributed precipitation, but it is also subject to frequent extremes of rainfall no less than of temperature.



The Equal Annual Range of Temperature, i. e. difference in degrees between the averages of January and July, is shown by the numbered lines. Small arrows indicate ocean currents. Large double arrows are the prevailing winter winds, warm from the ocean, cold and dry from the land. (Map adapted from original in Davis' "Elementary Meteorology", modified by Henry Hicks)

4.—A mountain climate which, being mostly outside the range of plant cultivation, need not detain us.

WHAT a country in which to attempt to grow plants! Where, as Dr. Trelease, then of the Shaw Botanical Gardens once remarked, "You get the cold of the north and the heat of the south—simultaneously!"

And yet, where else are offered such admirably varied and complete facilities for the cultivation of plants, properly chosen? Where else can be found so many opportunities for fitting plants to the conditions that best suit them—and for finding out what these conditions are. For, contrary to the probable impressions of most of us, it by no means follows that plants under cultivation should be given conditions identical with those of the regions in which those plants grow wild. Plants may grow naturally in a particular place not because physical or climatic conditions there are definitely most favorable, but because of the absence of insect or other enemies or influences that could prevent them from thriving.

Despite our climatic problems and obstacles, we can grow, and are growing, plants that are at least equal to those raised anywhere else in the world. Surely, even if slowly, America is becoming a nation of gardens; and we a people of garden lovers and garden workers.

There is one practical lesson to be learned from these facts of climate—that these differences as between the Pacific Coast region and the Atlantic states are fundamental, and that while the former may grow practically everything that the other enjoys, the converse does not therefore follow. There are limitations; and it is in view of this that THE GARDEN MAGAZINE dedicates to that particularly favored region, as yet young in garden lore, a December annual.

WHAT IS THE "MOST ARTISTIC" DAHLIA?

IT IS noted that Insulinde won this distinction at the Short Hills Dahlia Show, as stated in the November GARDEN MAGAZINE, and now comes the news from California that Insulinde just missed receiving Dr. Tevis's prize for the "most artistic" Dahlia in the San Francisco show. It was given to Ambassador, a wonderful Hybrid Cactus produced by Mr. Broomall. The judges settled on three Dahlias, including Shudow's Lavender and Insulinde, finally selecting Ambassador; the second place went to Insulinde, and the third to Shudow's Lavender.

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

Mr. Galsworthy's Flower Paintings

THE news that Mr. Frank Galsworthy and his delightful flower paintings have returned to America will be welcome to many of our readers who last year failed to have the opportunity of seeing this gardener-artist's work. Being a true gardener, a plant collector and practical grower, as well as an accomplished painter, he portrays his flowers faithfully as to color, form, and detail—they are portraits in the true sense. In New York the pictures will be open to view at the Kingore galleries on December 13th, and other cities will be visited later. THE GARDEN MAGAZINE is fortunate in being able to reproduce one of Mr. Galsworthy's flower pictures for the cover of its February number in association with an article from his pen on flower painting.

No Birds, No Crops

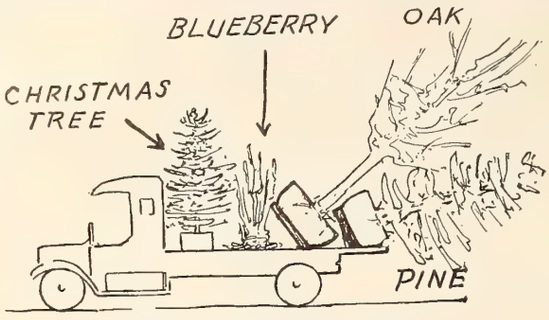
To the Editor of THE GARDEN MAGAZINE:

AN ACTIVE interest is being awakened on behalf of the birds, I note with pleasure, and the October GARDEN MAGAZINE has some very good articles on the subject. In talking with various people one is impressed with the fact that so few have any knowledge of the important relations between birds and the raising of crops. What freedom from insect pest we do enjoy is due largely to the welfare work of the birds. Without birds crops cannot flourish. Multiply the accomplishments of one average bird as shown by official records, and you will see the amazing possibilities of increased numbers of birds. The testimony of the several Experiment Stations, etc., is far too voluminous to quote here, but one brief citation will suffice.

At Clark University a captive bob-white ate in a day 100 chinch bugs, 12 squash bugs, 2326 plant lice, 39 grasshoppers, 12 cut worms, 12 army worms, 568 mosquitoes, 101 potato beetles, and 8 white grubs.

Another bob-white devoured in a day 1350 flies, 5000 Chrysanthemum black flies, 1286 Rose slugs, and 700 miscellaneous insects of which 300 were grasshoppers. This bird will eat 141 different species of insects and 129 species of weed seeds. The number of seeds taken in a single day by one bob-white accounts for 105 seeds of Stink-weed, 400 seeds of Pigweed, 5,000 seeds of Pigeon-grass, 10,000 seeds of Lambs-quarters.

It is estimated on that basis by a high authority that the bob-whites in Virginia and North Carolina consume annually between September 1st and April 30th, 1341 tons of weed seed and 340 tons of insects. A family consisting of two adult birds and ten young will consume 980,915 insects, 59,797,888 weed seeds in a year, in addition to other food. Some birds require one-half their weight in food daily. These figures seem impossible, but are facts and no more wonderful than the flight of birds during migration covering at tremendous speed more than a thousand miles without rest.—JAMES R. PITCHER, *New York.*



HOW TO GET PLANTS IN WINTER

WHAT YOU CAN DO IN DECEMBER

Suggestions From
HENRY HICKS

YOU can plant all, or nearly all winter if you plan for it. On Long Island it does not freeze enough to stop planting until the last of December or frequently the middle of January. Further inland it freezes more deeply. By mulching we keep out frost and have planted all winter for the past twenty years with the exception of three or four years where it froze through the mulch in late January or February. Mulching is not an extravagance but it is the cheapest way to feed your plants.

Two Dollars For One

To encourage winter planting we will add free to your order twice what it costs you to mulch. Suppose you wish a boundary of evergreens, oaks, beech and shrubs. We will mulch the ground for you or credit you as above.

Truck loads as sketched are delivered and planted nearly all winter. On mild days trees without balls of earth are planted. You can shut off the street, and unsightly buildings, make a sheltered play ground, or a foundation planting of dwarf evergreens, rhododendrons, laurel and hollies.

You don't enjoy putting off gardening plans. Remembering them is a burden to the mind and interferes with the planning of what to do next. December can be a month of accomplishment, not longing. You can use most of the winter for the improvement of your place without adding to the cost. You can keep the staff at your country place profitably occupied so as to get the most from your time and land.

Old places where the planting needs thinning out or re-arranging is where winter planting can be highly valuable. You will be surprised how little it freezes under the shrubs and evergreens. Mark what needs to be thinned out and mulch. If it is frozen you will find that you can pick through with heavy pick axes. Send us photographs or sketches of the changes you plan. Perhaps where you take out the shrubs, you would like to put in evergreens to make all winter beauty and shelter. Come to the nursery and pick out oak, pine, fir, 5 to 25 years old. Large trees 20 to 60 ft. high we can move for you this winter.

A good Christmas present is a truckload. It will not clutter up the house as other Christmas presents may. Plants nearly take care of themselves and grow more valuable. December is the time to plant a flower garden, berry bushes, grape vines, asparagus, rhubarb, apple and pears. Consider our time saving apples and pears 5 years old at $7.00 each.

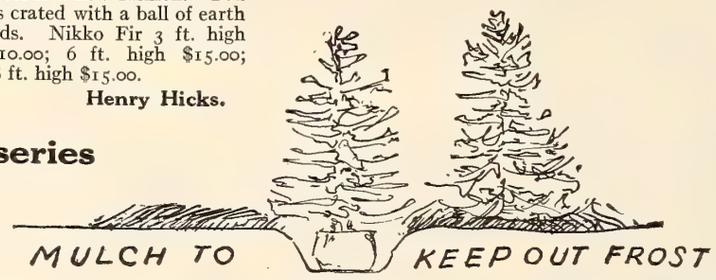
Because you are far away don't think nothing can be done until spring. Send the order and we will send what is best and take the risk and defer the balance until spring.

Send for Home Landscapes, Commuter's Edition will teach and amuse.

Live Christmas trees is a new fashion. You can take it up. Trees crated with a ball of earth for planting afterwards. Nikko Fir 3 ft. high $6.00; 5 ft. high $10.00; 6 ft. high $15.00; Douglas Spruce 6 to 8 ft. high $15.00.

Henry Hicks.

Hicks Nurseries
Box M
Westbury, L. I., N. Y.



My Unusual Catalogue For 1922

Will be of absorbing interest to every lover of our exquisitely beautiful Native Shrubs, Wild Flowers and Ferns. It has been largely rewritten and much helpful information has been added. There are more and better illustrations. Altogether, it is by far the most interesting, informative and attractive catalogue I have ever published.

Send For Your Copy To-day!

It will be ready to mail soon after January First and those who write for it *this month* will be first to receive it.

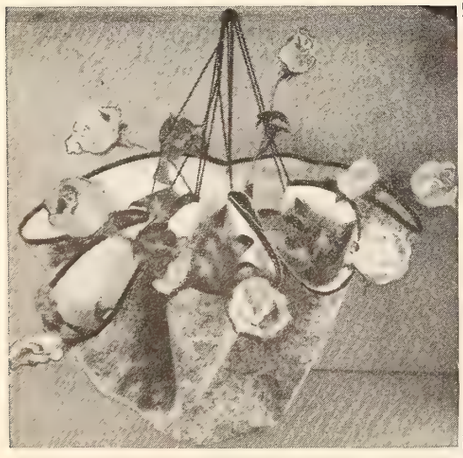
EDWARD GILLETT
Fern & Flower Farm
3 Main St., Southwick, Mass.

New Decorative Dahlia "Senorita"

Our Introduction for 1922

Illustrated price list on application.

RICHARD LOHRMANN
The West End Nursery
SAN RAFAEL CALIFORNIA



Flower Gathering

New and charming for the flower lover

GAY cretonne circular bag gathers up into 5 compartments by black silk cord and carries on your arm when in your garden. Then in house opens 24 inches flat on table and its rubberized surface prevents table damage. Delightfully versed boxed with hand tinted friendship card N2245, $1.50. Postpaid.

Have you ever seen our Catalogue of unusual and charming gifts? Please send for it!

DANIEL LOW & CO.
10 Townhouse Sq., Salem, Mass.

"A Million Dollars Worth of Dahlia Surprises"

Thus a customer expresses his delights in telling me about the success scored with my Dahlia seeds. Mr. Robert R. Hall, East Hartford, Conn., writes in part as follows:—

I have before me a bunch of dahlias, Pierre Leblond, Golden Arbor, Dr. Trevis, etc., with some of your seedlings. They are giants among giants raised on our farm at Marlborough, Conn. The Judge from Storrs College said she had been from Maine to Mexico and never seen such dahlias. Have to use a ladder to dis-bud. Plants are 11 feet tall. Imagine my feelings when I stood among these giants covered with blooms as large as a dinner plate. Then I went down to the seedlings and ye gods, what a fairyland. As long as I can buy seed from you I would never bother to save from my own. You certainly are the king of dahlia men.

Fenton's Hybridized Dahlia Seeds

are grown on the only Dahlia farm in the world making a specialty of Hybridized Dahlia seeds. Doesn't the possibility of raising scores of beautiful seedlings, no two alike, sound alluring? You cannot fail if you will start with any of these:—

100 Seeds Hybridized with Black Pearl (a gem of purest water, selling at $10.00 each) for... $3.00
85 Seeds selected from 50 crosses..... 1.00

Free folder will tell you more about Fenton's Hybridized Dahlia Seeds, also give you a very select list of the best and yet inexpensive varieties.

Fenton's Dahlia Farm
771 Buena Vista Avenue
San Francisco California

Gracious Homes
Given Added Beauty

The restful note that graceful evergreens impart the year 'round to home grounds can be easily, inexpensively given to any town, suburban or country home if

HILL'S EVERGREENS

are employed in the home grounds ornamentation. Specify Hill's Evergreens when consulting with your Landscape Architect, Nurseryman or Florist. We have been Evergreen Specialists for 60 years. Ready to supply choice specimens. Safe Delivery and Satisfaction Guaranteed. Write for free copy of our latest Evergreen Book.

D. HILL NURSERY CO., INC.
106 Cedar St. Dundee, Ill.

BOLLES DAHLIAS

Bolles Dahlia Brochures (*Illustrated*)

WRITTEN by an American Grower for American amateurs and professionals, for American conditions of climate, soils, and markets. Beautifully illustrated. Now on the press. Every dahlia lover, enthusiast, whether growing for joy, exhibition, or commercially, needs these booklets.

Thirty-five cents each. The brochure on Harvesting and Storage is ready for distribution. It may save your crop of tubers.

Bolles Dahlias as Christmas Gifts

Include Dahlias in your Christmas giving. Send postal to-day for my Christmas Plan whereby you may give one's heart's desire of choice dahlia tubers in Christmas stocking, paying for them at planting time next spring, thus making your Christmas money go farther this year. Twenty dollar prize box of tubers for best letter written me about dahlias. Ask for particulars.

My 1922 Dahlia Catalogue ready January First

CHARLTON BURGESS BOLLES
R. F. D. 3, Box 81 Media, Pennsylvania

It's Not Too Late To Make a Tulip Garden

So long as the ground doesn't freeze *hard* you can plant Tulips safely.

Darwin Tulips
extra fine mixed varieties with wonderful colorings, 50c per dozen, $3.50 per 100.

Breeder Tulips
Purple and bronze, yellow and bronze, brown and orange. 75c per dozen, $4.50 per 100.

Early Tulips, Single
Mixture of best colors and varieties. 50 cts. per dozen, $3.50 per 100.

Send your order to-day—we will forward the bulbs at once postpaid so you can plant immediately.

WM. M. HUNT & CO., Inc.
148 Chambers St. New York City

A Little Journey to the Home of Floral Novelties

All true progress in horticulture is traceable to a few who are not afraid to venture upon uncharted seas. Many years ago Charles H. Totty chose to explore each season's crop of novelties. As the years rolled by alliances were formed with the foremost hybridizers in the world. The best specialists in Europe and Asia now consider Totty's the clearing house for the choicest products of each season.

Glorious 'Mums to Come Soon

Many superb new varieties of Chrysanthemums will soon make a bid for your favor. Our California friends need only be reminded of the present high standing of Pink, White, and Yellow Turner, varieties of our introduction now recognized as quality standards in the Golden State.

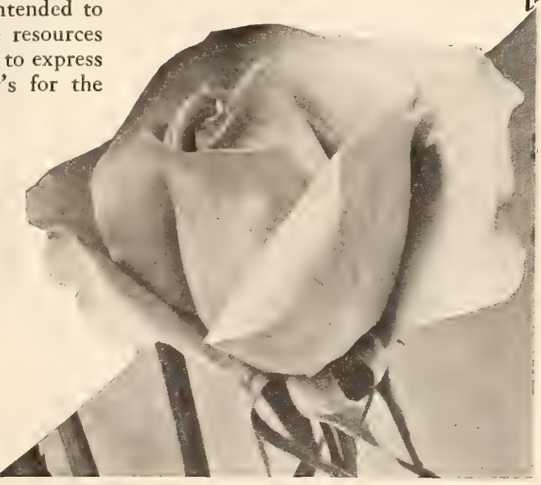
Greater Roses

Second only in importance to the Chrysanthemums, rule Totty Roses. A new comer with a great future is the new white rose "Angelus," a marvel of purity and fragrance and form. In the next greenhouse dwells "Madam Butterfly," while still another house holds a glorious lot of both golden and pink "Ophelias." Truly, the visitor to Madison will find a treat in store at any time, for if it is not 'Mums, it is Roses, while during the Spring vast trials of Hardy Perennials together with Dutch Bulbs will claim the garden lovers' attention.

Dahlias, Too, and Gladioli

Nor does the Totty organization confine its efforts to the things already mentioned. The newer things in both Dahlias and Gladioli are almost certain to find their way to Totty's, from whence have come many of the finest creations in flowering plants and bulbs during the past decade.

Since this announcement is particularly intended to acquaint Pacific Coast readers with the resources of the Totty establishment, it is only fair to express the grateful appreciation felt at Totty's for the liberal patronage bestowed upon them from garden enthusiasts in the Golden State.



As usual, the new catalogue offering the season's best in novelties will be ready for mailing soon after January 1st. It will be mailed with pleasure upon request, which please address to

Chas. H. Totty Co.
Madison New Jersey

California Dahlias

Introducing the Most Wonderful Dahlia of the Age!

AMUN RA

(*The Egyptian Sun God*)

Winner of the GOLD MEDAL — First Prize at the 1921 Exhibition of The Dahlia Society of California.

Write for illustrated Catalogue containing full description and color picture of Amun Ra. We list all the famous Prize Winners and standard varieties of the better grade.

JESSIE L. SEAL
607 Third Avenue San Francisco, Calif.

A Vital Message for Pacific Coast Gardeners

No greater garden enthusiasts can be found anywhere than those found from Oregon down to San Diego. And it is for this special group that we have a very special message. Here are the facts:

The dreaded Rose Bug has been conquered for good. Moreover, Aphis, Spiders, Thrip, striped and spotted Beetles, in short, the entire army of foes that attack your garden has met its match in

MELROSINE—The All-round Contact Insecticide

Since it kills rose bugs, the hardest foe to fight, it is easily the most powerful contact insecticide on the market to-day. We hope, in due time, to put it in every horticultural supply store. At present it is obtainable at the California Seed Company, 147 Market St., San Francisco. If not convenient to call there or order by mail, write us direct, sending name of your nearest dealer.

We will see that you are supplied. We shall also gladly send you descriptive circular giving additional information.

THE GARDEN CHEMICAL COMPANY
NEW YORK CITY, N.Y.

Flowers Fresh Every Day

and early garden next Spring. Just think what pleasure—and what profit, too—a small greenhouse would be to you this Winter!

Callahan Sectional Greenhouses

are made in several styles and sizes appropriate for the small gardener or city home. Artistic in design, they are factory-built in sections from the best cypress materials, ready to assemble quickly and with no other tools than wrench and screw-driver. They come all ready to put together—even the hardware in place.

Prices are now down. Write for the Greenhouse Book and let us show you how others have made their Callahan Greenhouse quickly pay for itself.

Write for The Greenhouse Book.

T. J. CALLAHAN CO.
32 S. Canal St. Dayton, Ohio

Also makers of larger greenhouses for commercial growers.

Mastick Dahlias

My 1922 catalogue will be sent on request about January 1st. Besides descriptions of the best American and Foreign varieties, it will contain many illustrations of my MASTICK creations.

M. G. TYLER 1660 Denver Ave., Portland, Oregon

Garry-nee-Dule Perennials

SOME of our most beautiful and useful perennials are native to our own woods and fields. Most of them are more satisfactory under cultivation than when competing for life in the wild state.

I have selected four desirable kinds that I believe will do well on the Pacific Coast as well as in other parts of the United States.

Aquilegia canadensis, Wild Columbine; *Asclepias tuberosa*, Butterfly Weed; *Polemonium reptans*, Jacob's Ladder; *Phlox pilosa*, Prairie Phlox.

These are strong nursery grown plants and I will send one each of the four kinds, carriage paid, for $1.00.

Please ask for our illustrated catalogue "Hardy Plants for the Home Garden." Gladly mailed free. Let's get acquainted.

W. A. TOOLE
Garry-nee-Dule **Baraboo, Wis.**

CALIFORNIA DAHLIAS

Many new ones listed in our 1922 catalogue

Send for a copy

FRUITVALE DAHLIA FARM
2832 Peralta Ave. Oakland, Cal.

IT'S JUST A SMALL BOOK

AN unpretentious booklet of 16 pages, filled with small but readable type, "Ornamental Plants for Landscape Planting" is eager to acquaint you with such plant material as is most suitable for Pacific Coast Gardens.

But It's Worth Asking For

Because you'll find it to give sound advice on the subject of developing the homegrounds. Peony and Iris Enthusiasts will find here the most comprehensive collections on the Pacific Coast. Catalogue request will be appreciated and please mention GARDEN MAGAZINE.

THE WEED LANDSCAPE NURSERY, Beaverton, Ore.

Your Home

deserves to be set to beautiful trees and plants. Write for free Catalogue describing Progress Stock in the making.

THE PROGRESS NURSERIES
1313 Peters Avenue Troy, Ohio

Ask for a description of
THE NATURE LIBRARY
Doubleday, Page & Co.

Green's Ornamentals

—A Success for 40 Years

They have in them 40 years of tree-growing experience

Shade Trees, Flowering Shrubs, Vines for the large estate or city lot.

Apple, Pear, Peach, Cherry and Nut Trees grown from whole roots. Exceptional variety of Berry Bushes and Vines.

SYRACUSE is a double size raspberry of highest flavor. Other new fruits—Caco Grape, Honey-sweet Black Raspberry, Rochester Peach.

FREE 64-PAGE CATALOGUE is a real text book on growing things.

No salesmen—buy direct to save money.

GREEN'S NURSERY CO.
11-21 Green Street Rochester, N. Y.

CHERRY HILL QUALITY

A SELECT STRAIN OF PEONIES OVER FIFTY YEARS IN DEVELOPING. IRIS, PHLOX, HARDY GARDEN PERENNIALS. SPECIMEN EVERGREENS, SHRUBS, SHADE TREES, THAT WILL SATISFY THOSE TO WHOM QUALITY IS UPPERMOST

CATALOGUE

T. C. THURLOW'S SONS, INC.

CHERRY HILL NURSERIES WEST NEWBURY, MASS.

Established 1810

CALLOWAY POTTERY

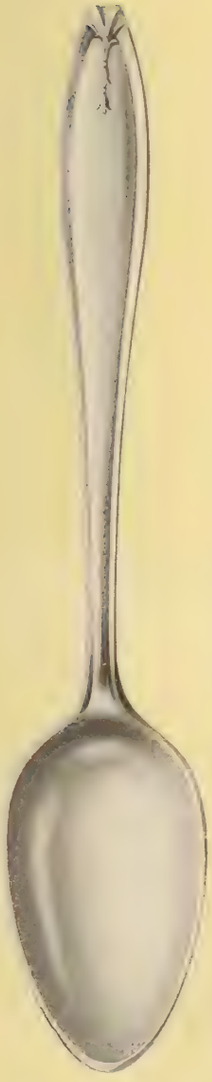
FOR GARDEN & INTERIOR

Send 10¢ in stamps for Catalogue of Bird Baths, Flower Vases, Boxes, Sun Dials, Gazing Globes, Benches and other interesting pieces in durable Terra Cotta.

CALLOWAY TERRA COTTA CO.
3214 WALNUT ST. PHILADELPHIA

WALLACE
Silver
Sterling & Plate

DRAWN BY NEYSA McMEIN © R. W. S. M. Co.



Hostess

TRADE "1835 R. WALLACE" MARK
HEAVIEST SILVER PLATE

When you ask your guests to be seated

IS IT with the happy assurance that every piece of your table silver is absolutely correct—and in its proper place?

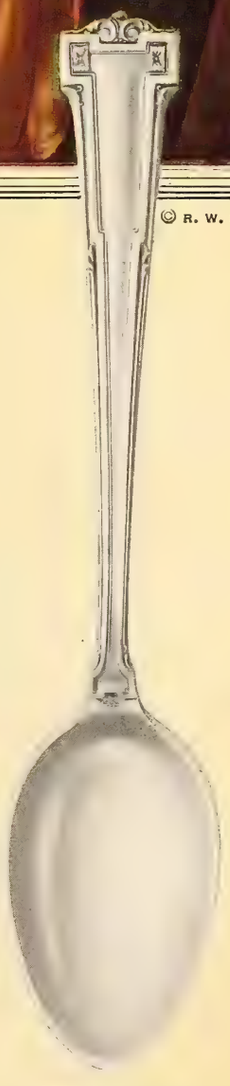
In subtle tribute to the perfect hostess we have designed an exquisite new pattern and called it the "Hostess." It is truly the spirit of hospitality translated into silver plate and is so well made by Wallace Silver craftsmen that it is *guaranteed without time limit.*

Rigidly adhering to the 80-year-old Wallace policy of fair dealing, we promptly offer the public the benefit of lower production costs. These reduced prices come just in time to suggest Wallace Silverware as a most appropriate Christmas gift.

There are many attractive patterns from which to choose, including the two illustrated. The HOSTESS in "1835 R. Wallace" Heaviest Silver Plate, is distinguished by its extreme delicacy and refinement; the DAUPHINE, in Sterling, by its beautiful Louis XVI lines, simplified to satisfy modern taste.

No matter what Silver you use, write for the Wallace Hostess Book. It tells in text, diagram and pictures just what every hostess should know in order to entertain smartly on all occasions. Profusely illustrated with correct table settings. Sent postpaid for 50 cents. Address: Hostess Department, Box No. 12.

R. WALLACE & SONS MFG. CO.
Wallingford — Connecticut
SILVERSMITHS FOUNDED 1835



Dauphine

R.W.&S.
STERLING

Gene Stratton-Porter's

most engaging character is this true child of Nature

HER FATHER'S DAUGHTER

OTHER BOOKS BY
Gene Stratton-Porter

A Daughter of the Land

At the Foot of the Rainbow

Freckles

Friends in Feathers

A Girl of the Limberlost

The Harvester

Laddie

Michael O'Halloran

The Song of the Cardinal

Moths of the Limberlost

Morning Face

Music of the Wild

Homing With the Birds

LINDA STRONG'S inheritance from her remarkable father includes an abundant fund of love for Nature and people. She understands both, with a quick, sympathetic devotion.

And it is Linda's deep capacity for love that sends her merrily through the adventures of this romance of sunny California—until, finally, when she has won your heart as well as the hearts of her true-blue comrades, she finds happiness and a home in her native Lilac Valley.

Applause for Gene Stratton-Porter has been expressed in the purchase of nine million copies of her works. *Her Father's Daughter* is delighting both the lovers of her Nature books and the admirers of her fiction. Throughout the lovely, realistic atmosphere of these California gardenlands, and the happy surprises of the story, radiates always the winning personality of Linda Strong.

Get an early copy of Her Father's Daughter

At all booksellers; $1.75 net.

DOUBLEDAY, PAGE & CO. GARDEN CITY, NEW YORK

FIELD OF BREAK O' DAY

BREAK O' DAY
A Dahliadel Introduction

WINNER of Sweepstakes Prize at Seattle, 1921, for best bloom in show, defeating the best of the Western Dahlias. A triumph for an Eastern Dahlia. Break O' Day is a hybrid-cactus of gigantic size but pleasing form. The color is a clear sulphur yellow shading to white at tips. The petals are illuminated by a satiny sheen, giving the flower a waxy appearance. Awarded the American Dahlia Society's Certificate of Merit at Storrs, Conn., 1920.

We consider our 24-acre Dahlia farm one of the best equipped in America. Six of our varieties were awarded Certificates of Merit by American Dahlia Society in 1920.

Break O' Day **Freckles** **Harvest Moon**
Quaker City **Ruth Roland** **Stanley**

Dahliadel assures you of the cleanest and healthiest stock procurable, as all roots used in filling orders are grown at

DAHLIADEL NURSERIES
Warren M. Maytrott Vineland, N. J.

I Welcome California Orders Any Time!

Some of my best customers, I am proud to say, are Californians. It seems that the climate of the Golden State brings out the best there is in my Dahlias. Over a million roots carefully labeled and securely stored, are awaiting shipment from my frost proof warehouses.

Every California reader of Garden Magazine, is welcome to a free copy of my catalogue which will be off the press soon after the new year. Please write for it NOW.—"Lest you forget."

J. K. ALEXANDER 27-29 Central Street East Bridgewater, Mass. "The Dahlia King"

Kunderd's New Gladiolus Catalog

for 1922 describes nearly 400 varieties in Ruffled, Plain Petaled and Primulinus Types. All of them originated by A. E. Kunderd. 29 varieties are shown in beautiful colors and many others are illustrated in halftone. Most complete cultural information is also given with

Special Directions for Growing Show Flowers

Kunderd's Gladioli are now so well known as the best in the world that no garden is complete without a choice collection of them. No other grower has ever produced so many nor such wonderful kinds. Send for the beautiful free catalog described above, which shows in colors these new Ruffled strains.

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THIS PLANT STAND HAS BEEN SPECIALLY DESIGNED FOR GROWING LARGE FERNS IN RESIDENCES AND FOR HOLDING THE FERN IN ANY POSITION FOR DECORATIVE EFFECT. THE LARGE BOSTON FERN SHOWN IN THIS PICTURE CAN BE EASILY GROWN IN A LOUDON ADJUSTABLE PLANT STAND IN THE HOUSE

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Arbors *Enhance* the Garden's Beauty

Well placed arbors, pergolas, and trellises are one of the most effective means to get the most out of any garden. They spell the difference between a well appointed and the well intended garden.

Trellises, Pergolas
Designs That Please

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Fine to support small vines, roses, etc. Made of hardwood, fan shape. Sent **Post Paid to any place in the U. S. if cash with order.**

18 inches high 55c
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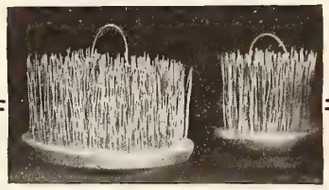

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Just the thing to double the life of your cut flowers. These holders are unique, but pronounced by professional and amateur alike as absolutely practical.

Sizes 2 to 8 inches, $1.50 up.

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"YOUR GARDEN YEAR" is the title of our catalog so plain and easily understood that it will meet your approval at once. It tells you about such new novelties as Golden Twelve Rowed Evergreen Sweet Corn, Bromfield's Early Wonder Beet, the finest quality Pole Bean yet discovered, a new Silver Rose Aster, Double Cosmos, a new Poppy from Europe, marvelous Pink Petunias and many more interesting and delightfully new Flowers and Vegetables. Send for a copy today. Mailed free.

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Nothing is quite so convenient, nor quite so good as Stim-U-planT, the concentrated, odorless, stainless fertilizer tablets, now so generally used by up-to-date gardeners.

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This book will be larger and more complete than ever and a dependable guide for growing all kinds of Vegetables and Flowers.

A large, handsomely illustrated book, showing in colors and photo-engravings many of the varieties offered, and giving cultural information written by experts.

It will offer the best Vegetable and Flower Seeds, Lawn Grass and Agricultural Seeds, Garden Tools and Implements, Plants of all kinds, including the newest and best Dahlias, Roses, Hardy Perennials, etc.

It will be ready in January and mailed free to all applicants who mention this publication.

Write to-day

Henry A. Dreer 714-716 Chestnut Street Philadelphia

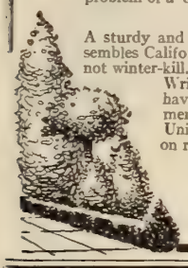
Two new hardy hedge plants now ready for you

Box-Barberry

For beauty, symmetry and endurance. It solves the problem of a dependable edging or low border hedge.

IBOLIUM PRIVET

A sturdy and dependable plant for larger hedges, resembles California Privet, but much hardier and does not winter-kill.



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Your Watering Problems Solved

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Concealed lines for the lawn, overhead lines for the vegetable garden, portable sprinklers for golf courses, lawns, and gardens. Moderate in cost, high in efficiency, economical of water.

Tell us what you want to water and we will be glad to send a most interesting catalogue and do our best to help you solve your water problems.

For over a score of years the Skinner Systems have been giving satisfaction.

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WHAT could be more useful or acceptable to your garden friends than a gift of seeds, bulbs or something useful for the garden. Let us know what you want to give and we will make an attractive Christmas present out of same. Our 1922 catalogue will be ready early in January. It will contain some interesting Garden Novelties. Make sure you get one.

Seedsmen Main Street — Bassi Frères de Paris Inc. — New Rochelle New York

The Glen Road Iris Gardens

Grace Sturtevant, Prop.

Orders entered for 1922, New catalogue out in February.

Wellesley Farms, Massachusetts

OUR plant resources, comprising over 800 cultivated acres, enable us to assure you that no matter what your planting plans call for in

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We can fill any requirements to your maximum satisfaction. Write for our catalogue.

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EVERGREENS

Rosedale Evergreens, due to frequent transplanting, have unusually sturdy root systems. We are equipped to meet your every planting need. Write for free catalogue.

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Suitable and Suggestive for Beautifying Home Grounds with

Pergolas, Rose Arbors, Lattice Fences, Garden Houses and Garden Accessories

Our illustrated catalogue contains just the things required to lend cheer and pleasure to the surroundings of home.

(When writing enclose 10c and ask for catalogue "H-33.")

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Brooder for 50 to 100 chicks *No. 3 Poultry House for 60 hens—2 units* *Setting Coop*

STRONG, HEALTHY CHICKENS are raised in Hodgson Poultry Houses. These practical, attractive houses can be erected in less than an hour. They are weather proof, vermin proof, thoroughly ventilated, warm and dry. Easy to clean and convenient to move. There's a Hodgson Poultry House for every purpose, guaranteed to be the best the market affords. Write to-day for illustrated catalogue.

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G. D. TILLEY, *Naturalist*
DARIEN *Phone 96* CONNECTICUT

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EVERYBODY who has a garden ought to know about Gilson Garden Tools—the handy labor savers that make garden work a pleasure and assure better cultivation and better yields.

The story of these tools is interestingly told in a copiously illustrated booklet, "Bigger Crops through Cultivation," which describes the Gilson Weeder, the Liberty Adjustable Cultivator, the Gilson Triplex and Gilson Scratch Weeders, Dandelion Diggers and Lawn Edge Trimmers. Write for it.

J. E. GILSON COMPANY
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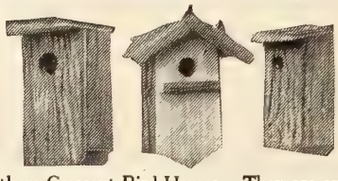
Winter Homes for Song Birds



Give them Crescent Bird Homes. They are ornamental and practical. They last because they are made from the very best materials. Three of these little homes for $5.00. Postage extra. Weight about 10 lbs.

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Toms River "Birdville" **New Jersey**

Pulverized Sheep Manure
Best for Lawns and Gardens

NATURE'S OWN PLANT FOOD

Great for Lawns, Grass Plots, etc. Apply it in the fall. It affords the fullest advantage of fall rains and fall growing period, insuring an early start in the spring and a luxuriant growth.

Sheep's Head Brand also is used extensively for Gardens, Small Fruits, Shrubbery, etc. Rich in nitrogen, phosphoric acid and potash; also adds humus. Guaranteed absolutely clean—nothing but sheep manure—free from weed seeds which are killed by heat. Dried and pulverized for easy application. Circular and prices on request.

SHEEP'S BRAND HEAD TRADE MARK NATURAL GUANO CO. AURORA, ILLINOIS.

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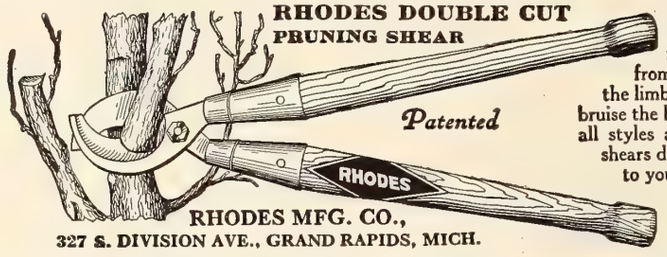
THE ROMANCE OF OUR TREES *by* Ernest H. Wilson, M. A., V. M. H.



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Real Bronze Colonial Designs
From $4.50 Up
Memorial Tablets
Also other garden requisites
Manufactured by
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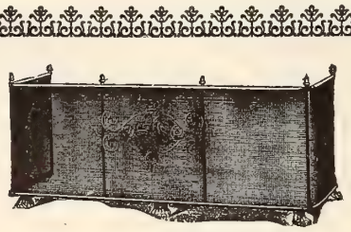
COLOUR IN MY GARDEN
By LOUISE BEEBE WILDER

A practical colour manual, with exquisite paintings made from the author's own garden. ***Net, $10.00***

DOUBLEDAY, PAGE & CO. Garden City, N. Y.



Christmas Fire Screens

Nothing can lend a true Christmas atmosphere of hospitality like a cheery open fire. "BUFFALO" Fire Screens make most acceptable and unusual Christmas Gifts.

"BUFFALO" FIRE FENDERS, SPARK GUARDS and FIRE PLACE SCREENS are unusually distinctive in appearance. Their good and correct designs, their well placed ornamentation, and their attractive finish lend charm to the most perfectly appointed residence. They insure perfect safety from flying sparks and absolute protection to children and older members of the household.

"BUFFALO" FIRE FENDERS, SPARK GUARDS and FIRE PLACE SCREENS cannot be compared with flimsy, cheap ones. They are strong and durable, and made by the most skillful workmen from the best "BUFFALO" quality of fine mesh wire cloth. We make them to fit any size fire place opening and in any desired ornamentation or finish.

Write for complete catalogue No. 8-B.F.
Mailed upon receipt of 10c postage.

BUFFALO WIRE WORKS CO., Inc.
(*Formerly Scheeler's Sons*)
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Gardening, Farming and Poultry Husbandry
the new profession for Women
SCHOOL OF HORTICULTURE, Ambler, Penn.
situated in beautiful open country, 18 miles from Philadelphia. Two year Diploma Course entrance September 13, 1921, and January 17, 1922. Thorough training in theory and practice. Unusual positions obtainable upon Graduation. August Course in Gardening. Circulars.
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IRON AGE
Farm, Garden and Orchard Tools
SEND FOR BOOKLETS
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TOWNSEND'S TRIPLEX
The Greatest Grass Cutter on Earth
—Cuts a Swath 86 Inches Wide

Drawn by one horse and operated by one man, the TRIPLEX MOWER will mow more lawn in a day than the best motor mower ever made, cut it better and at a fraction of the cost.

Drawn by one horse and operated by one man, it will mow more lawn than any three ordinary horse-drawn mowers with three horses and three men.

Send for catalogue illustrating all types of TOWNSEND MOWERS

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Stockholders holding 1 per cent. or more of total amount of stock on October 1, 1921. F. N. Doubleday, Garden City, N. Y.; H. S. Houston, Garden City, N. Y.; S. A. Everitt, Garden City, N. Y.; A. W. Page, Garden City, N. Y.; Russell Doubleday, Garden City, N. Y.; Nelson Doubleday, Garden City, N. Y.; W. F. Etherington, New York City; Alice A. DeGraff, Oyster Bay, N. Y.; Dorothy Doubleday Babcock, New York City; Florence VanWyck Doubleday, Oyster Bay, N. Y.; William J. Neal, New York City; Daniel W. Nye, Garden Gity, N. Y.; John J. Hessian, Garden City, N. Y.; E. French Strother, Garden City, N. Y.; W. Herbert Eaton, Garden City, N. Y.

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(*Signed*) DOUBLEDAY, PAGE & COMPANY
By S. A. Everitt, *Treasurer.*

Sworn to and subscribed before me this 1st day of October, 1921.
(*Signed*) Frank O'Sullivan, Notary Public
Queens County, N. Y.
Certificate filed in Nassau County
Commission expires March 30, 1922

AWAY WITH THE CESSPOOL

Secure all the sanitary comforts of a city building by installing an

Aten Sewage Disposal System

Allows continuous use of washstands, bathtubs, toilets, sinks, showers, etc. The septic tanks of all Aten systems are made of concrete forms, not wooden forms. No expert engineering service or experienced supervision in the field required.

Simple to install, nothing to get out of order.

Our booklet No. 11 tells how and why. Sent free upon request.

Aten
Sewage Disposal Co.
286 Fifth Ave., New York City

Mayhap You Are Mistaken

IT SEEMS like only day before yesterday when a man who owned a limousine was looked upon as more than a man of means. He was in the so called "luxury class." But today the word "limousine" is rather of a memory and pretty much all of us own "closed cars," as they are now called.

Quite the same transformation and assimilation is taking place with greenhouses. They are becoming "quite the usual thing." No place in the country that has the room, is considered complete without one.

To meet the requirements of those who want just a simple, moderate sized house, we have just published a delightfully informative booklet called "Owning Your Own Greenhouse." You and your friends are most welcome to a copy.

Hitchings and Company

General Offices and Factory, Elizabeth, N. J.

New York, 101 Park Ave. Boston-9. 294 Washington St.

Irises that are different

—not all the familiar blue and white commonly known—try a few and be convinced.

Iris season is just being ushered in in California with the blooming of the all winter flowering I. unguicularis (stylosa). Our old friend Crimson King is also sending up flowering spikes and here and there we are greeted with stray blooms from several of the bearded varieties. A little later Japonica and others will add beauty to our gardens. Fortunately in our favored clime it is not too late to still plant. Stylosa can be successfully planted for two or three months yet (not later than the last of Feb.), and all of the bearded Irises will in most cases furnish bloom the coming spring if still planted at this late season. Now is also the time to sow seed of our pretty native species.

Mr. R. S. Sturtevant, Sec. of the American Iris Society says: "We like to think of Irises not only as a fascinating genus in themselves, worthy of deep study, but as occupants of every hardy garden; and even if you grow but a few varieties in your border you will find our work both of benefit and real interest."

Special Offers for Dec.-Jan. Orders

Collection A—5 choice varieties of bearded Irises, none listed at less than 50c, including Mesoptamica which is listed at $1.00 and blooms very early, for $2.00.

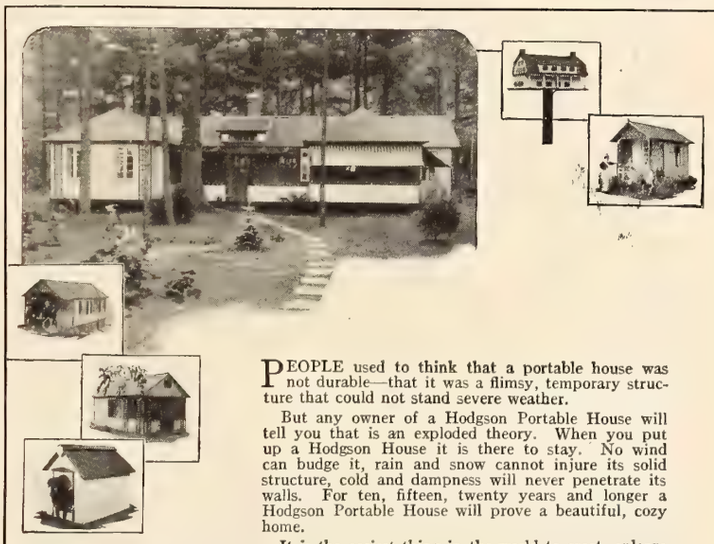
Collection B—10 choice varieties, 9 bearded, and 1 stylosa, all listed at 25c, and over, for $2.00.

Collection C—5 choice varieties, 20 of each, all of the bearded type, and which list at 25c and over, 100 in all, for $10.00.

In the above offers we make selection, but label all varieties true to name. In all 3 collections we will include one packet of mixed native seed.

Price list, with description of varieties, mailed upon request.

THE DEAN IRIS GARDENS **Moneta, California**



PEOPLE used to think that a portable house was not durable—that it was a flimsy, temporary structure that could not stand severe weather.

But any owner of a Hodgson Portable House will tell you that is an exploded theory. When you put up a Hodgson House it is there to stay. No wind can budge it, rain and snow cannot injure its solid structure, cold and dampness will never penetrate its walls. For ten, fifteen, twenty years and longer a Hodgson Portable House will prove a beautiful, cozy home.

It is the easiest thing in the world to erect, enlarge or move. Clear instructions are furnished that tell you exactly what to do. One or two days at most will complete the job.

Hodgson Portable Houses have more uses than you can imagine. Hunting lodges, garages, bungalows, overflow houses, playhouses—any sort of building that you want can be put up with a minimum of trouble and expense.

We'd like to send you our complete illustrated catalog.

E. F. HODGSON CO.

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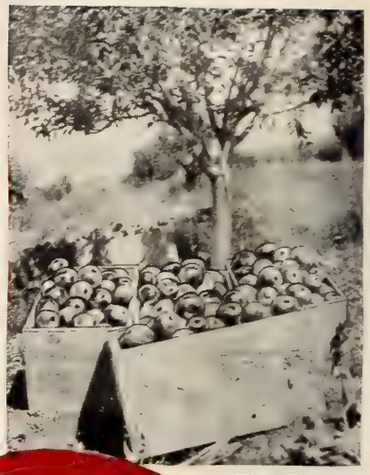
HODGSON *Portable* HOUSES

The Apple Trees that Made $1.25 Land Worth $1500.00 an Acre!



HON. Franklin K. Lane, late Secretary of the Interior, wrote:—

"Land in the Columbia Basin that I could have bought for $1.25 an acre . . . They have taken the Delicious apple, cared for it, until now it makes that land worth $1,500.00 to $2,000.00 per acre.

This is "the dessert apple supreme" —**the apple sold for 25 and 50 cents each in fine fruit markets!**

Stark Delicious apple trees helped Buck Bro's, Elberfield, Ind., get $50,000 for one crop last year from 40 acres of apple trees

—the apple trees that brought Ed Mollatt of Port Murray, N. J., $12.00 per barrel, while Baldwins sold for $2.50 to $3.00 per barrel—

—the trees that enabled Kenneth O. Clark of Pike Co., Ill., to take four acres of very ordinary land and clear $5,400 from **one** crop of these big, glorious, flashing red apples—

Stark Delicious

Here's an Average Size One➔

Five Boxes Stark Delicious
From a Stark Delicious tree 3 years after planting.
J. D. Bashor.

3 Books Free

Bears Crops Despite Frosts & Freezes

In many sections, Stark Delicious (red) and Stark's Golden Delicious (yellow) were the only varieties to bear crops this past season. For instance, the Louisville, Eve. Post, states "Chas. Schindler, extensive fruit grower, Floyd Co., Ind., stated yesterday that half of his apple crop was saved, the variety saved being Stark Delicious **alone**. He believes that this variety is the **one** to withstand the late frosts which occurred in Ind."

In our test orchards, both Stark Delicious and Stark's Golden Delicious bore, despite 3 frosts and 2 freezes here at Louisiana, Mo., this year.

Sold for $15 Per Bbl.

Chris Ringhausen, "Apple King of Illinois" who has planted thousands of Stark Delicious, got 1,000 barrels apples this year from his Illinois orchards. Sold them for $15.00 per barrel.

—$— Salesmen Wanted Good Pay Weekly Write us TO-DAY

Plant Fruit Trees that have 3 Sets of Blooms—Defy Frost

Stark's Golden Delicious

The remarkable habit of these trees of putting forth not only the ordinary fruit spur blooms, but also lateral bloom-buds **and** terminal bloom-buds makes it often a frost dodger. We had good crops on our Stark's Golden Delicious this year—and so had other growers in Mo., Ky., Iowa, Ala., Ark., Mass., Ohio, Ill., Wash., Ore., etc.

Write at once for Free Copy of our BIG "Prize Fruits" Book—**FREE!**

$20.00 from One 10c Packet of Stark Seeds

Get New Seed Catalog That's what Mr. Fred Benoit, Whitinsville, Mass., did in 1921. As thousands say, "Every Stark Seed comes up—and is true to name." "STARK SEEDS PAY"—everyone who plants them. Learn about our **NEW, PROVEN STARK'S** "BLIGHT-RESISTER" Tomato—endorsed by members of U. S. Department of Agriculture.

Write at once for **FREE** 1922 Catalog—also Free "Landscaping Plans" Portfolio—shows you **FREE** how to beautify home grounds at little expense. **Address Box 2.**

Stark Bro's Nurseries

Oldest in America — Largest in World

at LOUISIANA, MO., Ever Since 1816

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Send me at once Free Copies of 1922 catalogs marked with X in square below
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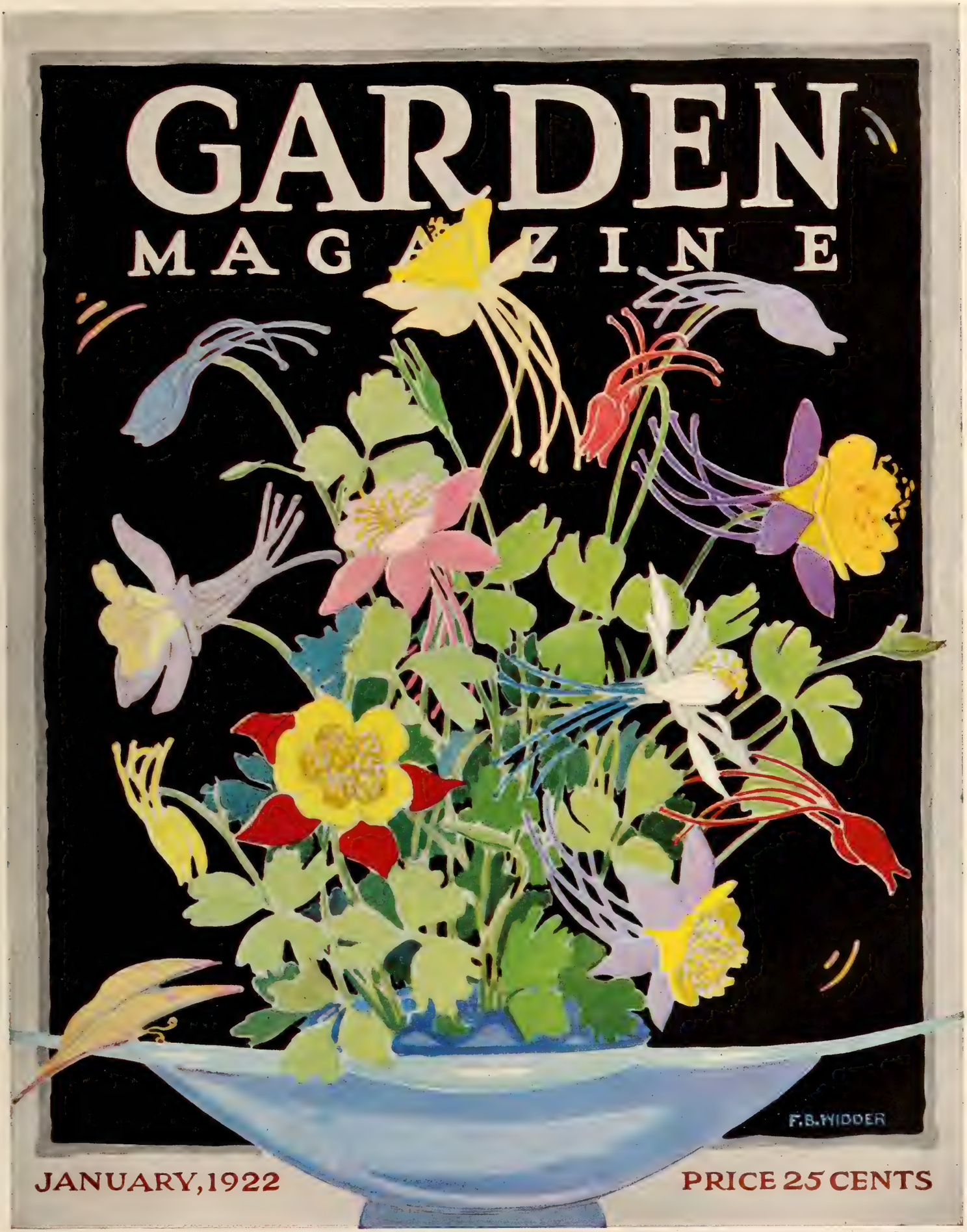
THE COUNTRY LIFE PRESS, GARDEN CITY, N. Y.

Planning Your Own Garden



Vol. XXXIV. No. 5

January, 1922

Doubleday, Page & Company, - Garden City, New York

Boston, Mass. *Chicago, Ill.* *Los Angeles, Cal.*

Improved European Filberts

The Only Filbert of the kind Grown in the United States

For ten years we have specialized in propagating these plants so that you can grow this Great Nut Delicacy, Big Meaty Filberts, (Hazel Nuts) on your own grounds. Here is a beautiful shrub which yields such an abundant supply of large nuts that it not only fills an important place in ornamental plantings and in nut borders for walks and drives, but is a success commercially.

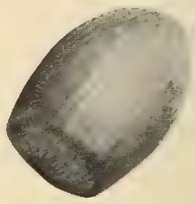
Plants bear the second or third year after planting, and at the tenth year yield 20 to 25 pounds per bush.

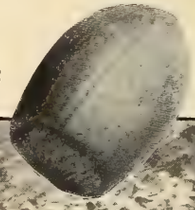
Thrive in any moderately rich, well-drained soil, with very little cultivation and succeed over a wide range of territory and latitude. *Are hardy and adapted to the more northern states.* Another specialty is the

New Everblooming Rugosa Rose [*red*]

Shown in natural color in our catalogue. For mass and hedge plantings—(not for the rose garden)

Clusters of beautiful bright red flowers resembling bunches of red carnations. Very double with petal edges serrated and with the beautiful deep green, healthy foliage characteristic of the Rugosa Rose. Blooms continually from early summer until frost.



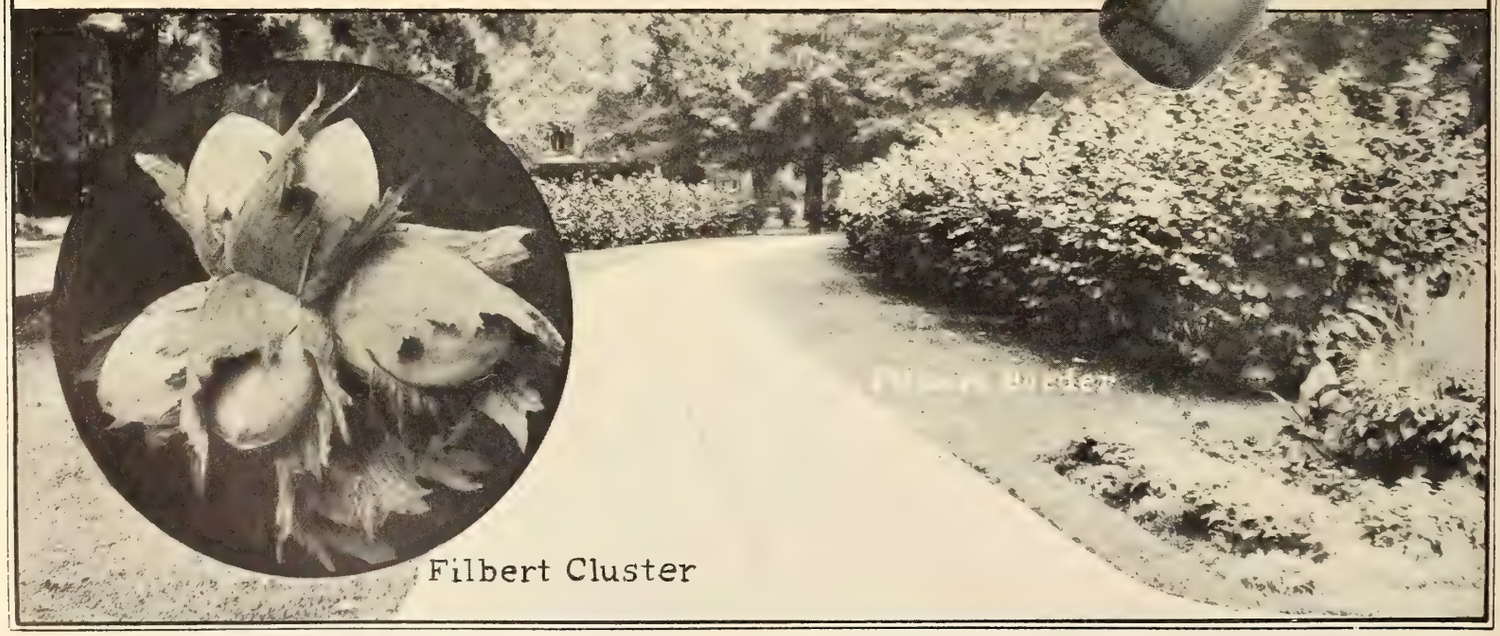


These are only two of our specialties. Many others are illustrated in full color in our free catalogue for 1922. Send for your copy to-day and find out about our splendid assortment of fruit and ornamental trees, shrubs, roses, berry plants, etc.

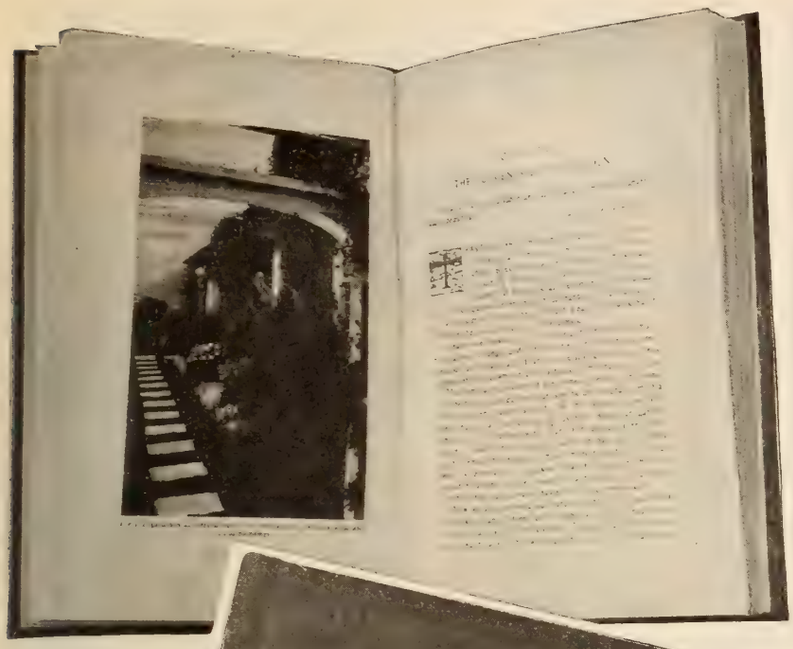
L. W. HALL CO., Inc., 474 Cutler Bldg., Rochester, N. Y.

America's Exclusive Producer of Improved European Filberts

Our Free Catalogue Illustrates Splendid Nursery Stock of all Kinds



Filbert Cluster



Here's A Book You'll Want and We Want You To Have It!

THE Home Garden by E. L. D. Seymour is just the kind of a book you need to help you get greater joy out of every garden effort. Freely illustrated with garden scenes in natural colors, its chapters on the fundamental elements that really make the Garden a success, etc., will help you a long way to have just the kind of a garden that will best serve *your* needs. All told there are 56 pages of helpful garden lore, every line of which inspires to make better gardens. This book is *not* a Catalogue, contains no advertising, and will prove a welcome addition to every library.

And You May Have it FREE, With the Choicest Flower Seeds for 1922

In order to secure for this valuable book the widest possible distribution we offer it at less than cost of production. To help you materialize its suggestions on Flower Gardens we have made up a few special selections in Flower Seeds.

Here are Annuals to Grow for Cut Flowers

Asters, Queen of the Market, Giant Comet, Grego's Giant and Sample's Branching, all in finest color mixtures; Chrysanthemum, Double Mixed Coronarium; Calliopsis coronata; Cosmos, Mammoth Perfection Mixed; Bachelor's Button Mixed; Sweet Peas, California Giant Spencers, Mixed; Scabiosa or Morning Bride; Sunflower, Double Chrysanthemum flowered Mixed; Verbena, finest hybrids; Zinnias, dwarf large flowering.

Here are Annuals for Growing in Beds, Outdoors

Ageratum, Blue Floss flower; Balsam, Double Camellia flowered; Sweet Alyssum, Carpet of Snow; Gypsophila or Baby's Breath; Larkspur, Dwarf Rocket Mixed; Nasturtiums, Dwarf Mixed; Marigolds, African Double Mixed; Petunia, Single Bedding Mixed; Poppy, Shirly Mixed; Phlox, Drummondi Mixed, Portulaca, Single Mixed; Pinks, Double Chinese Mixed.

All told these 25 Annuals will provide a liberal flower show around your home, besides giving you flowers by the armful for inside the home. And this abundance of floral joy is easy to obtain for we offer

This Book and above 25 Packets of Choicest Flower Seeds for $2.50 Postpaid

The seeds alone represent a liberal $2.50 value. The book is included with the collection to help you get the utmost out of the seeds. But please do not think that it deals in flower gardening alone! There are chapters devoted to vegetable gardening that are quite as practical. Other chapters deal with Shrubs, Perennials, Vines, etc. In case you prefer to see the book first, send 50 cents which will be rebated in connection with any order for seeds amounting to $2.50 or over.

Annual Garden Guide Free for the Asking

Our "Pakro" Annual will introduce to you the choicest procurable in both flower and vegetable seeds. It will also acquaint you with "Pakro Seedtape" the most startling departure in seed planting, the factor that enables the veriest beginners to score results as good as those of the "seasoned" expert. Write for the catalogue TODAY or, better still, order Seeds *and* Book and the catalogue will follow automatically.

Substantially bound in stiff Covers —a regular $1 Book, for 50c postpaid or Free with Flower Seed Order

American Seed & Seedtape Co.
Madison New Jersey

Planning *for* GREATER Garden Pleasures?

The one joy of a snow clad winter world is the thought of spring and the planning of greater gardens. To think of bending over the fragrant earth to sow the seeds, to anticipate tending the growing crops, to dwell on the harvests to be gathered, such indeed are pleasant thoughts. Your planning hours may be made increasingly delightful, as well as profitable, if you choose as your companion

Childs' Catalogue for 1922

A Guide for those in Search of Unusual Garden Surprises

From the very beginning the house of John Lewis Childs has endeavored to broaden the interest in home gardening in America. For many years, our catalogue has recorded progress in offering all the worth-while new creations. Freely illustrated with true-to-nature pictures (many in natural colors), this catalogue requests the privilege of assisting you in garden planning. It matters little which phase of gardening you prefer, which flowers you like most; you will find our offerings in Dahlias, Gladioli, and other floral specialties just as complete as those of any specialist.

While mailed regularly to all customers of record, we desire every reader of this magazine to get a copy. Ask for yours to-day, and mention Garden Magazine. The Catalogue will reach you by return mail.

Oh yes, and if there are little folks around your home, just ask for our special booklet "Home Garden for Children," intended as a stimulus to young America.

John Lewis Childs, Inc. **Floral Park, New York**

JANUARY, 1922

THE GARDEN MAGAZINE

CONTENTS

COVER DESIGN: COLUMBINE — *F. B. Widder*

PAGE

THE CHARM OF WATER IN THE GARDEN - - - - - - - 225
Photograph by John Wallace Gillies

AN UNTRAMMELED BIT OF GARDENING - - - - - - - - 226
Photograph by Mattie Edwards Hewitt

A FASCINATING CORNER IN TURTLE BAY GARDENS - - 227
Photograph by John Wallace Gillies

THE MONTH'S REMINDER: WHEN TO DO WHAT YOU WANT TO DO - - - - - - - - - - - - - - - - 228

WHAT, WHY, AND HOW MUCH AMONG TABLE VEGETABLES — *Adolph Kruhm* 230
Photographs by Mattie Edwards Hewitt, and others

MAKING A GARDEN PLAN FOR YOURSELF - *Carl Stanton* 233
Plans by the author

A PICTORIAL HISTORY OF THE GARDEN *H. H. Manchester* 237
I. At the Dawn of History
Illustrations furnished by the author

GARDEN AT PIDGEON HILL, HOME OF MRS. MEREDITH HARE - 241
Photographs by Paramount Pictures

WHEN THE GARDENER BUILDS HIS HOME - *Estelle H. Ries* 242
Photograph by Mattie Edwards Hewitt

BEAUTY IN THE LITTLE GARDEN - - - *Lena M. McCauley* 245
I. It's Planning to Fit its Location
Illustrations furnished by the author
II. It's Planting for Continuous Bloom - *Lilian C. Alderson* 248
Illustrations supplied by the author

THE HOUSE THAT WAS BUILT FOR A GARDEN — *Arthur W. Colton* 250
Photographs supplied by Charles A. Platt

MAKING A LAWN THAT WILL LAST - *John Collins Campbell* 254
Drawings by the author

ON READING A SEED CATALOGUE—POEM - *Hilda Morris* 255

WATER IN THE MID-WEST GARDEN - - - - - - - - - 256
Photographs and plan by Albert D. Taylor

WALKS AND TALKS AT BREEZE HILL—V *J. Horace McFarland* 258

AMONG OUR GARDEN NEIGHBORS - - - - - - - - - 259

THE OPEN COLUMN - - - - - - - - - - - - - - - - - 260
Photographs by G. H. Shockey, Cora J. Sheppard, E. W. Tattersall and others

LEONARD BARRON, Editor

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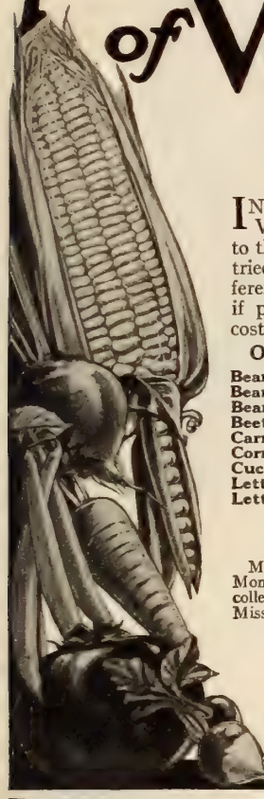
Entered as second-class matter at Garden City, New York, under the Act of Congress, March 3, 1879

A Garden Full of Vegetables for $1.00



IN again offering our Home Garden Collection of Vegetable Seeds, we have given critical attention to the varieties, selecting only those which have been tried and proven of excellent merit under widely different conditions of soil and climate. This Collection if purchased separately from our catalogue would cost $1.70.

One Packet Each of the following for $1.00

Beans—*Bountiful*	**Onion**—*White Portugal*
Beans—*New Hardy Wax*	**Parsley**—*Double Curled*
Beans—*Fordhook Bush Lima*	**Peas**—*Little Gem*
Beet—*Detroit Dark Red*	**Radish**—*Scarlet Globe*
Carrot—*Selected Chantenay*	**Radish**—*Long White Icicle*
Corn—*Golden Bantam*	**Spinach**—*New Zealand*
Cucumber—*White Spine*	**Swiss Chard** — *Giant Lucullus*
Lettuce—*Black Seeded Simpson*	**Tomato**—*Selected Stone*
Lettuce—*May King*	**Turnip**—*White Globe*

Complete cultural directions with each collection

ORDER YOUR COLLECTION NOW

Mail this advertisement, or present at our store with Check, Money Order, Dollar Bill or Stamps, and secure this excellent collection, sent postpaid to any point in the U. S. east of the Mississippi. **For points West and Canada add 25c ($1.25)**

Our 1922 Spring Seed Annual sent on request

Stumpp & Walter Co

30-32 Barclay St. New York City

Wayside Gardens

HARDY LILIES

For Immediate or Early Spring Delivery

Lilium Auratum	...$1.25 for 3	$4.50 for 12	$35.00 per 100
Lilium Album	... 1.10 " 3	4.00 " 12	30.00 " 100
Lilium Melpomene	... 1.10 " 3	4.00 " 12	30.00 " 100
Lilium Henryi	... 1.00 " 3	4.00 " 12	30.00 " 100
Lilium Regale	... 2.00 " 3	7.20 " 12	50.00 " 100
Lilium Canadensis	... .75 " 3	2.50 " 12	15.00 " 100
Lilium Superbum	... .75 " 3	2.50 " 12	15.00 " 100
Lilium Tigrinum splendens	... .75 " 3	2.50 " 12	15.00 " 100
Lilium Tigrinum flora plena	... 1.00 " 3	3.50 " 12	20.00 " 100
Lilium Umbellatum Davuricum	... 1.00 " 3	3.50 " 12	20.00 " 100

A comprehensive catalogue offering the largest stocks of Hardy Perennials in America, will with pleasure be mailed to any reader of Garden Magazine.

MENTOR OHIO

Burpee's Seeds Grow

Burpee's Annual

The Leading American Seed Catalog

Burpee's Annual is a complete guide to the vegetable and flower garden. It is a handsome book of 180 pages with more than a hundred of the finest vegetables and flowers illustrated in the colors of nature.

Burpee's Annual tells the plain truth about the Best Seeds That Grow. If you are interested in gardening or farming, Burpee's Annual will be mailed to you FREE.

Write for your copy of Burpee's Annual to-day. Just tear off the coupon and fill in the space below.

TEAR HERE

W. ATLEE BURPEE CO.
Seed Growers, Philadelphia

Gentlemen: Please send me a **free** copy of **Burpee's Annual.**

NAME .....

R. D. OR STREET .....

POSTOFFICE .....STATE.....

When The Garden Becomes The Home—

When the shadows shorten and pleasant green again clothes the land;

When the very air coaxes to forsake indoors to enjoy a world reborn with spring's beauty.

That is *the* time when the difference between a mere garden and a garden that's a home becomes most apparent. Are comfortable seats waiting for you? Are there pergolas to support fragrant flowers, shade-giving vines? If your garden plans include garden furnishings, become acquainted with

"Garden Craft" Arbors, Garden Seats, Pergolas, etc.

Our complete line offers a wide choice of furniture designed to transform any garden into a home. Roomy seats, graceful arbors, trellisses for every need, in designs to suit every taste.

In addition, we design and make many styles for specific purposes and to fit individual requirements. It will be a pleasure to submit sketches and estimates without obligating the inquirer.

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We have just published an attractive book, mostly pictures, through which we show the wonderful results obtainable in improving the home grounds through judiciously chosen furniture. It will help you visualize, what can be done in even small space, at low cost. May we mail you this catalogue? A postcard suffices, if you mention G. M.

Garden Craft, Crystal Lake, Ill.

LOUDON ADJUSTABLE PLANT STAND

THIS PLANT STAND HAS BEEN SPECIALLY DESIGNED FOR GROWING LARGE FERNS IN RESIDENCES AND FOR HOLDING THE FERN IN ANY POSITION FOR DECORATIVE EFFECT. THE LARGE BOSTON FERN SHOWN IN THIS PICTURE CAN BE EASILY GROWN IN A LOUDON ADJUSTABLE PLANT STAND IN THE HOUSE

WRITE FOR BOOKLET AND PRICE

MARIETTA HOLLOW-WARE AND ENAMELING CO.
MARIETTA, PENNSYLVANIA

Novelties for 1922

"Helvetia", Single late flowering Aster. Brilliant crimson. Hybrid from the American late branching type. This unusual color is very pleasing and is a much desired addition in "Helvetias."—Invaluable for cutting.
Pkt. 50c, 5 Pkts. $2.00.

"Eschscholtzia", (California Poppy.) *Mauve Beauty*, a positive new creation in California poppies. Color is beautiful shade of pure mauve. Wonderfully effective in beds and an admirable cut flower.
Pkt. 50c, 5 Pkts., $2.00.

Cosmos. New extra Early Flowering Double: Ever since the Double Cosmos was introduced growers have been striving to obtain an early flowering Double. We are pleased to offer this novelty in three distinct colors.

Extra Early Flowering, Double White
Extra Early Flowering, Double Pink
Extra Early Flowering, Double Crimson

The plants grow to about 3 ft. high, forming a perfect bush bearing gorgeous double flowers of rare beauty on long stems. Seed sown in April will bloom in July.
Pkt. 50c., 5 Pkts., $2.00

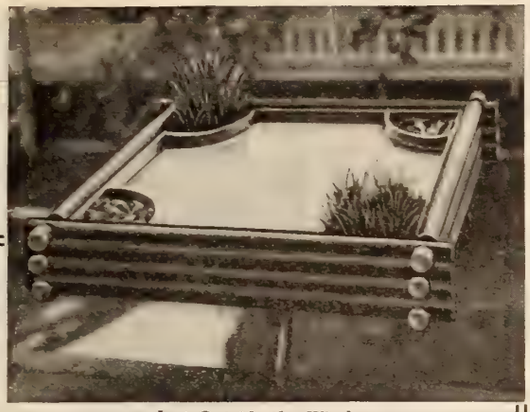
SPECIAL CATALOGUE OFFER. For $2.00 we will mail you postpaid one packet of each of these novelties, five pkts., together with our 1922 Catalogue. A collection that will give you something new in your garden or border, and something your neighbor hasn't seen.

Our Spring Catalogue gives many helpful garden facts. A copy will be sent you on request.

Seedsmen Main Street — Bassi Frères de Paris Inc. — New Rochelle New York

In Winter

While the Holiday Spirit rules, let us not forget the Birds



Just Outside the Window

Style No. 42B. Complete with bracket, etc. Price postpaid in U. S., $6.85.

A kind Providence has given us the birds to cheer us with their song, charm us with their beauty, and to protect our trees, shrubs, and plants. They help conserve the nation's food supply by defending crops against ravages of insects, etc.

Bird protection stands for Character building. Foster the sentiment with the help of our Educator Cabins for birds and household pets.

EDUCATOR LOG CABINS

FOR BIRDS AND HOUSEHOLD PETS

Conserve your trees and shrubs, by installing Educator Bird Cabins to shelter the useful birds.

Educator Products Are Distinctive

Every Bird Lover will find our 32 page Booklet describing the complete line of Educator Log Cabins full of valuable hints on how to attract birds and how to hold them. Show many cabins "at work" under natural surroundings. A copy of this booklet is gladly sent free on request if you mention Garden Magazine.

EDUCATOR GIFT AND PLAY PRODUCTS

MYSTIC, CONNECTICUT, U. S. A.

"Just Delightfully Different"

My Garden Favorites

Spring, 1922

(Seventh Year)

The new issue of this invaluable volume for the Garden Enthusiast, a catalogue of "Just Delightfully Different" Flower and Vegetable Seeds, Gladioli, Plants, Roses and Garden Requisites.

Now Ready

Write for a copy, it is yours for the asking.

Maurice Fuld, Inc.
Poul E. Atkinson, President
Plantsmen - Seedsmen
7 West 45th St. New York

"As Ye Sow"

Like begets like, among all things that grow. And it is a well-known fact that, the poorer the strains, the more prolific proves the seed production of the species. That is the reason why seeds, even of one and the same variety, differ so greatly in price, coming from different sources.

A Dreer Principle That Safeguards the Gardener

The strains we offer in both Vegetables and Flower Seeds are the product of the foremost specialists in seed production. That, however, is not enough assurance to us. We "check up" these specialists *every year*, in the trials conducted by men who know types, strains and recognize variations in both. By carefully studying the behavior of the kinds on trial, we learn to know the upward *or* downward tendencies in strains. It is a Dreer Principle never to offer kinds the strains of which show a downward tendency.

Dreer's Garden Book *for* 1922

A mine of information on many garden topics.

Some years ago we invited a score of expert amateurs to help us write culture directions that really help. These men and women, in all walks of life, have helped to make Dreer's Annual Catalogue a veritable reference work of valuable facts concerning flower and vegetable gardening. It has been enlarged to 224 pages and contains eight colored plates, besides numerous photo-engravings and offers the best Vegetable Seeds, Flower Seeds, Lawn Grass and Agricultural Seeds, Plants of all kinds, including the newest Roses, Dahlias, Hardy Perennials, etc.

Write to-day for a copy which will be mailed free if you mention Garden Magazine.

Dreer's Perfect Forcing Carrots

Henry A. Dreer, *Established 1838*

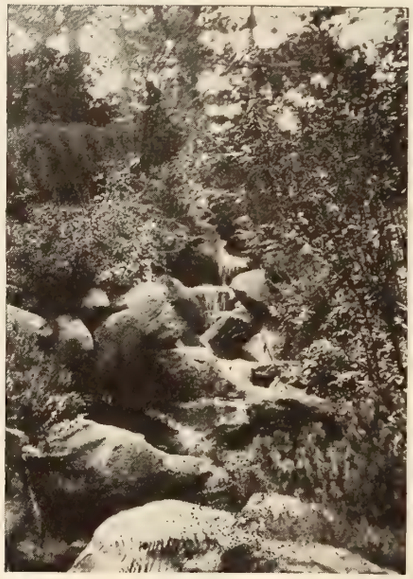
714-716 Chestnut Street **Philadelphia, Pa.**

Edward Gillett Makes
An Important Announcement

I HAVE BEEN propagating and growing native plants for 44 years. I have always believed the time would come, and during my lifetime, when their refined beauty, their permanence and their all-around superiority to imported plants in American Landscape Work would be recognized. My faith has at last been fully justified. Foreign styles of gardening and landscape work have gone out of vogue. The demand to-day is for a distinctively American treatment, planned to accord with the natural surroundings and therefore expressive of that perfect harmony and good taste, which it now seems is henceforth to prevail among us.

This change of attitude has excited enthusiastic interest in the use of our Native Trees, Shrubs, Evergreens, Wild Flowers and Ferns. It has also brought to me, during the past two years, a constantly increasing volume of requests for advice regarding the culture of native plants, for suggestions as to what kinds would be suitable for various locations and purposes, for the making of planting plans and for professional landscape service, frequently involving the developing of entire estates.

I have therefore found it necessary to perfect a Service Organization fully equipped to plan and carry out any form of Naturalistic planting, and to give expert advice on any subject connected therewith. The services of this organization are now at the disposal of anyone interested.



A "Mountain Rivulet," installed by our service department. The construction is entirely artificial. The slope is filled ground, the rocks collected from the field, the water piped from the house and the plants Nursery grown. If this effect can be obtained artificially, think of the possibilities in developing a natural stream!

Landscape Construction

This Department is conducted by a well known firm of Naturalistic Landscape Specialists. Their work includes the making of plans, laying out and superintending plantings, road and path construction, grading, masonry, designing and building of private bridges, ornamental shelters, rock work, pools, etc.—in short, the tasteful development of a place, either in part or as a whole.

Scientific Tree Service

This important work is given attention by expert Landscape Foresters, who have treated successfully both individual trees and woodlands on many of the finest estates in the East. Our system includes proper pruning, spraying, feeding and cavity treatment, together with intelligent deforestation, where desirable, and the installation of new tree plantings for the purpose of adding to the beauty and comfortable enjoyment of the property.

A Consulting Naturalist

On places which have been laid out and planted by competent Landscape Architects, there are, in a great many instances, undeveloped woodlands, uncultivated fields or suitable locations for Wild Flower Sanctuaries, Bird Sanctuaries, Rock, Bog or Water Gardens, which do not require construction work or the making of detailed plans. Expert advice and supervision is needed, however, if it is desired to install successfully any of the features named, and a Consulting Naturalist of distinction is available for this purpose. He also serves as consultant to Landscape Architects, Park Superintendents and others who are not familiar with the cultural requirements of our native plants.

My Unusual Catalogue for 1922 **will be ready to mail early next month. It is by far the best, most interesting and most helpful issue I have ever published. Write for your copy *To-day* and be among the first to enjoy it.**

Letters Welcomed From Those Interested

Do not hesitate to write me regarding any subject connected with native plants or Naturalistic Landscape Work. Your letter will be promptly referred to the expert best qualified to answer it and he will give you in full detail the information you desire.

Edward Gillett, *Fern and Flower Farm*, Southwick, Mass.

286 Fifth Avenue
NEW YORK CITY

1524 Chestnut Street
PHILADELPHIA, PA.

Write today for our 1922 Seed Catalog!

For over 54 years John A. Salzer Seed Company has enjoyed an unequalled reputation as the reliable seed house of the country.

Salzer Garden Seeds are sold with a money-back guarantee.

All Salzer Seeds are tested at our great Cliffwood Farms estate near La Crosse. Here we maintain a force of many garden experts, under the direction of a European specialist, whose constant object is the testing, proving and bettering of the seeds we sell.

EVERYTHING FOR THE GARDEN

Our catalog comprises 134 pages, fully illustrated, showing every variety of vegetable and flower seeds, and all of the choicest strains.

We have always specialized in the developing of new and advantageous varieties, and have brought out many of the most famous strains known.

This catalog will give you complete information about our new offerings, as well as giving you a complete list of the seeds you will require for vegetable and flower garden, as well as for field and grass seeds.

ALL NORTHERN GROWN

Our seeds are noted for their hardiness, being all Northern grown, hence less subject to frost destruction.

We also pride ourselves on having the finest collection of early maturing vegetables and early blooming flowers.

Send for this great 1922 catalog before planning your gardens for next Summer

OUR SPECIAL COLLECTIONS

We have two special collections for country estates—a vegetable and a flower collection. Each is listed at $2.50. Will send either one—or both—on receipt of $2.50 each.

Our vegetable collection includes seeds for all popular varieties of garden vegetables, and all of the finest strains we grow. Seed enough to sow a garden of 1500 square feet, enough to keep you in choicest vegetables and most delicious salads all Summer long.

Send for this collection when writing for catalog. It is the biggest value for the money ever offered.

List of Seeds in Collection:

SNAPDRAGON
CANDYTUFT
BACH. BUTTON
SWEET PEAS
MIGNONETTE
CALIF. POPPY
GAILLARDIA
MATRICARIA
NASTURTIUM
VERBENA
ASTER MYOSOTIS
COSMOS LOBELIA
PANSY DAISY
ZINNIA PHLOX
PINKS DAHLIAS

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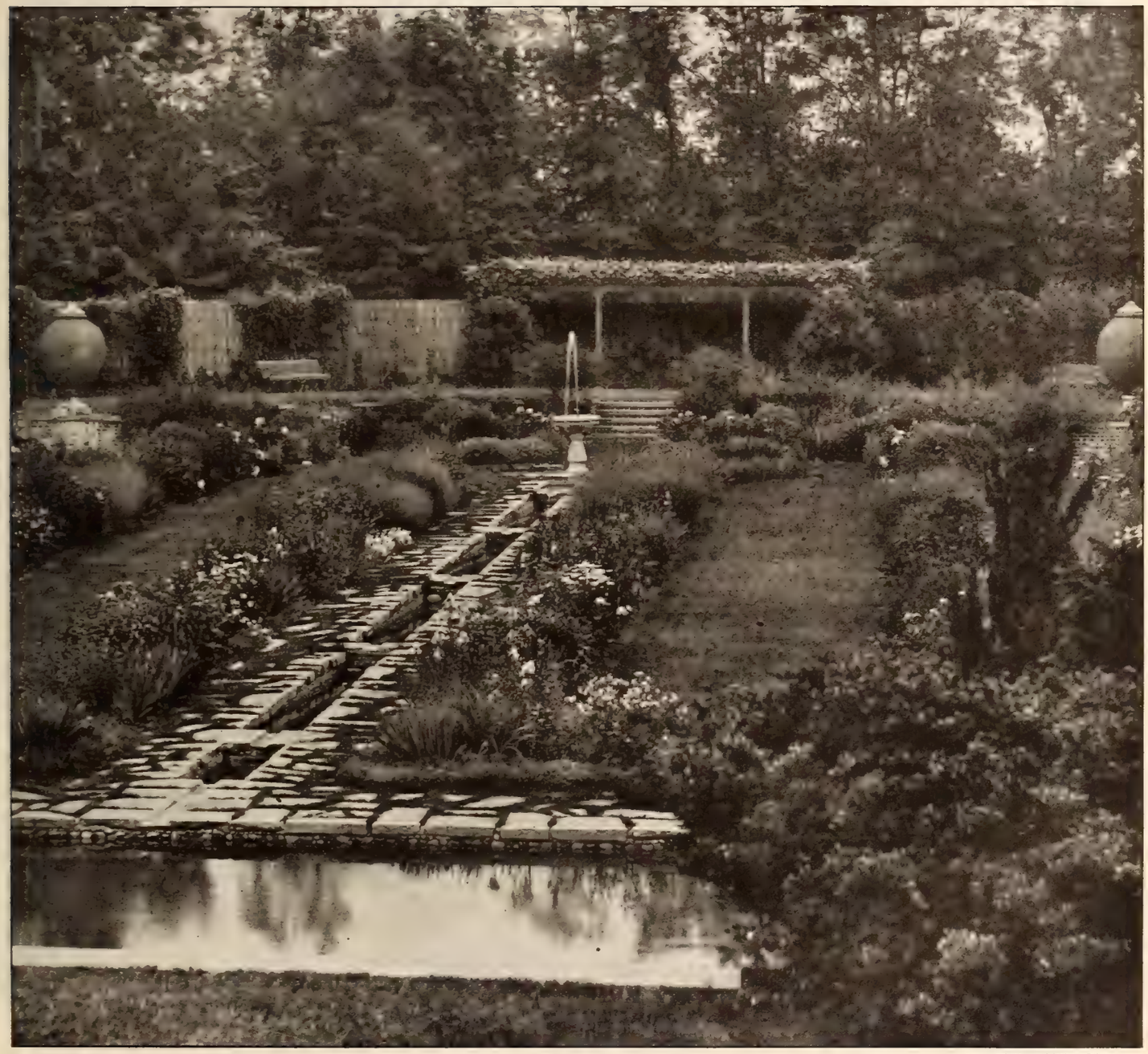
Dept. 30 **LA CROSSE, WIS.**

SOW·SALZER'S·SEEDS

The Garden MAGAZINE

Vol. XXXIV, No. 5 *January, 1922*



John Wallace Gillies, Photo.

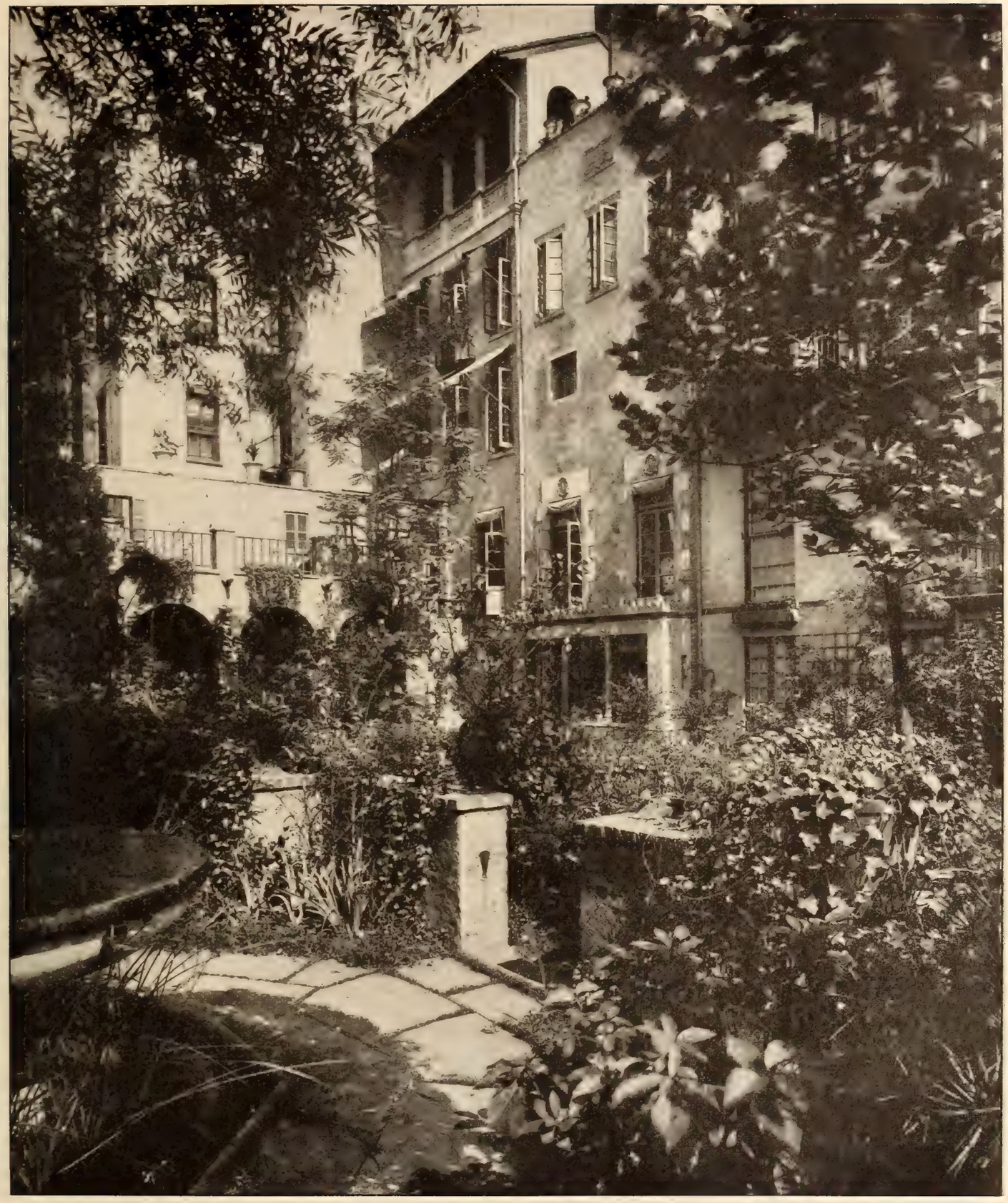
"I THOUGHT OF ALL THE PLACES THAT I KNEW
WHERE SILENCE DWELLS, AND PEACE, TO CHOOSE ME ONE
THAT I MIGHT SHARE IT WITH THE WARMING SUN:—"
Walter Prichard Eaton

Moving water adds so much sparkle and makes possible the introduction of many moisture-loving plants. Garden of Mrs. Harry Payne Whitney as seen from the steps of her Long Island studio at Old Westbury

Mattie Edwards Hewitt, Photo.

" * * * SUCH GARDENS ARE NOT MADE,
BY SINGING: 'OH, HOW BEAUTIFUL!' AND SITTING IN THE SHADE,"
Rudyard Kipling

After all, the things in which we take the most satisfaction are those that have required thought and effort for their achievement; they then take on individuality and meaning for us. Here we have a very finished and yet wholly untrammeled bit of gardening—the sort of pool birds come to not as wary visitors but because they feel at home in this friendly, sheltered corner presided over by the quietly alert little figure framed in Larkspur. Garden of Mrs. Wm. Steele Gray, Greenwich, Conn.; designed by Miss Grace Tabor



John Wallace Gillies, Photo.

"UP AND DOWN THE CITY STREET
MEN GO PAST ON BUSY FEET
WHILE I, INSIDE MY GARDEN,
SIT IDLE, GLAD, AND DREAMING—
BORNE ON DREAMS DOWN WAYS MORE SWEET
THAN ARE EVER FOUND BY BUSY FEET."

Amer Pindar

Among vines Polygonum Auberti, Wisteria, Honeysuckle, and Ivy have done particularly well under city conditions as found in Turtle Bay Gardens, East 48th and 49th Sts., New York City; among trees the Willow and Sycamore; among flowers Verbena and Heliotrope have proved steady and prolific bloomers; also the hardy Chrysanthemums. Wm. Lawrence Bottomley and Edward C. Dean, Associated Architects

WHEN TO DO WHAT YOU WANT TO DO

The Month's Reminder

JANUARY—WHEN WE MAKE PLANS FOR THE FUTURE

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practice. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

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JANUARY is really one of the most important months of the gardener's year, for while actual work outdoors is to a great extent dependent upon the vagaries of the season, yet planning and ordering are matters that can be done indoors in the worst of weather, while activity outdoors is at its lowest ebb. Real success in gardening is only reached by having thorough and well considered plans ahead. Arrange, re-arrange, and again re-arrange the details of the coming year's work (on paper) until the desired combinations and sequences are obtained. If your place is the best planned, and best kept in town, the example will spread so that your town ultimately becomes a better and more beautiful place to live in. Beauty pays in actual dollars and cents as well as in other less tangible ways.

Resolutions for the New Year

While the New Year's resolutions are being made, it would be well to put down on paper those appertaining to the garden, and during the long evenings ahead endeavor to work them out to a practical solution; then when the season arrives for actual operations, one knows just what is to be done, in addition to how and where.

Ask yourself a few questions; What would you like to accomplish? This is no easy question to answer. Write it down. Any number of answers may be made and something still be left out. The personal equation, however, largely affects what will be done; ask yourself if your enthusiasm is of the kind that urges you to actually do things, or is it of the flash in the pan kind that makes a lot of smoke, but doesn't start anything; or, having started, fails to finish.

If your enthusiasm is genuine, and your plans for improvements ambitious, don't let that enthusiasm die hard by attempting too much. It is perfectly easy to accomplish on paper all the different things you can think of and would like to see done, but it is so much easier to wield a pencil beside a comfortable fire than it is to wield a hoe outdoors. *Results* are your goal.

Have some phase of gardening as a special hobby. This does not mean leaving out other interests, but specializing in some kind of work or some flower that particularly appeals to you. Beds of such flower favorites, accessible and intimate, will give an added zest and personal interest to your garden at all times.

Intensive Cropping?

Getting two crops where you got one before? Like chess, "it's a great game." There are some good text books on the subject, and now is the chance to make your move.

Thus plan all your first plantings—except, of course, the full season crops like Salsify, Parsnips, etc.—with a definite idea of what is to follow them when they mature and are removed, so that from start to finish there will be no idle rows in the garden. For instance, follow earliest Peas with Eggplants and Peppers; intermediate Peas may be followed with Endive, a second planting of Bush Beans, Beets, etc.; and the late Peas with Cabbage, Cauliflower or Brussels-sprouts. The first planting of Corn should be out of the way in time for setting the fall Celery and the next one—about a week or ten days later—in time for the Celeriac. (See also suggestions on pages 231, 260).

Orders

It will soon be time to get off your orders for all kinds of things. Read carefully the dealers' announcements in the advertising pages and send requests for catalogues of whatever interests you.

Bird baths, bird houses, new fencing, pool for the gold fish, new seats, vases, and baskets for summer flowering plants need to be considered now.

All required nursery stock, perennials, seeds of annuals and vegetables should be ordered as soon as the lists can be made up after the catalogues have been studied.

Good tools are essential to a successful garden. Check up those you have and make a list of new ones needed.

New Plantings and Propagation

Large trees may be conveniently moved when the wall of earth about the roots is frozen solid. Do the digging while the ground is open and make the move when sufficiently frozen.

Include in your lists, when planning improvements about the grounds, plants with persistent foliage, i.e. that does not fall until late in the autumn, thus prolonging the season, and adding to the general landscape effect.

If you have a greenhouse and a propagating bench with bottom heat, many of the evergreens may be propagated by means of cuttings made at this time. Select the healthiest and most robust of the young wood; and if frozen when cut, restore to normal condition by plunging in cold water.

Hardwood cuttings of well ripened deciduous plants may also be secured now, and prepared for rooting.

Lawns, New and Old

Plan to improve the lawn; don't be content with a worn-out, patchy, moth-eaten appearance. Make definite plans for improving it. Having the material on hand when the time comes is half the game. First of all you want good seed; cheap lawn seed is dear at any price. Figure on about a quarter pound to every hundred square feet. A fairly good sod will not require this amount when renovating in the spring.

And the fertilizer; there are many special brands on the market, but in our experience a top-dressing of bone meal one season, and hardwood ashes another is well worth while. Mix the bone meal with very fine-screened loam, in the ratio of 1 part bone to 5 of loam, and top-dress the lawn with this about two weeks before seeding. If bone is applied at the same time as the seeding is done it molds and the young grass damps off easily.

Vegetable Garden

Very little can be done in the North Atlantic states during this month save to prepare manure, and when weather permits get it on to the ground. Check up the supply of bean poles, brush, tools, sash, etc., and order to replenish stock.

In milder sections of the country, where there is but little or no frost, the hardier kinds of vegetables may be sown outdoors, such as Asparagus, Beets, Carrots, Cabbage, Cauliflower, Leeks, Lettuce Onions, Turnips, etc. In localities so favored that these vegetables can be sown outdoors it is not too soon to think of preparing a hotbed to start such tender subjects as Tomatoes, Egg-plants and Peppers.

It is generally preferable, however, to wait until February 1st for the earliest hotbed; in the meantime the manure for it can be collected.

Time is not infrequently lost during the actual planting season by planning the vegetable garden for convenience in planting, whereas convenience in cultivation is more essential. Planting is done but once, while cultivation is done several times during the life of the crops. Arrange the various rows as far as possible to a uniform width so that you do not have to change the width of the cultivator

every few rows. On each occasion this has to be done time is lost. Moreover, plan to hill up several rows at one time and save taking off the hilling accessories too frequently. Get the necessary tools and implements, including wheel hoes, seed drills, etc.

Give air to the Celery on all favorable occasions.

Remove the covering from the coldframes on good days.

Rhubarb and Asparagus may be taken into the forcing house.

Look over glass in the sash for coldframe and hotbed. Rebuild, or order new ready-made ones.

Where cover crops are grown systematically, satisfactory results may be obtained by the use of commercial fertilizers alone, but if the soil "lacks body," i. e. "deficient in organic material," don't depend upon fertilizers alone. Get some barnyard manure. If the commercial fertilizer requirement is not great, better purchase it ready mixed. Get some nitrate of soda; it is a fine plant stimulant when used with discretion as soon as needed on crops that appear to be standing still instead of growing.

The Home Orchard

In the home garden the orchard is usually quite restricted in area, and oftentimes some other phase of gardening has to be omitted to make room for even a small area for fruit. How about intercropping the orchard? It is worth the effort, and can be made profitable. Fruit trees may also be introduced into the general plantings—thus serving two purposes.

Locality, and the demands of the family will be determining factors as to what crops one can use to advantage. Strawberries will thrive almost anywhere, so will Currants, Gooseberries, Blackberries, and many of the smaller vegetables, in addition to Melons, Tomatoes, and Cucumbers.

Pruning and Spraying

Continue these outdoor duties as weather and circumstances permit, using lime-sulphur or miscible oil, both at the full strength while growth is dormant.

Forcing Peas and Potatoes

While it hardly pays to grow Potatoes in the greenhouse in view of the early dates on which new southern Potatoes are available, yet where one has room, a few of an early variety may be grown in pots or on a bench. A cool temperature is absolutely essential at the beginning—it is better to start at 40 degrees than higher. As time passes, however, they respond to a rise in temperature, consistent with increasing growth. Tubers used for this mode of culture should be allowed to develop sprouts in shallow flats in a light but cool position near the glass in order that the sprouts may be sturdy. Give drainage in the bottom of the pots and light porous soil covering the sets about two inches. By using ten or twelve inch pots sufficient room will be left to allow of topdressing as growth increases.

Early Peas may be grown under similar conditions and soil, adding a little bone meal. Sow about ten seeds to a pot and thin out later to half a dozen plants. After planting, both Peas and Potatoes may set under the bench until the growth is a few inches high when give all the light possible.

In the Greenhouse

There is a busy month ahead preparing for the early vegetables which are to mature in frames. Early Cabbage, Cauliflower, and Lettuce may be sown now with this end in view. Also Onions and Leeks for exhibition purposes.

Seeds of any kind left over from last year should be given a germination test before sowing in quantity.

Weak stems on Carnations are evidence of too high temperature. Rust is caused by having the foliage wet overnight, and is most prevalent on plants lacking vigor. Spray ½ ozs. Potassium sulphide to 2 gallons water.

Amaryllis that have ripened their growth to be taken into the work room and either re-potted or top-dressed as they may require. Do this when the flower spikes begin to show an inch or so, as they often do in January.

Early-flowering Snapdragons that have grown into bushy specimens with plenty of buds and bloom on them to be fed if they are to maintain good quality. Sheep manure, mixed with equal parts of loam or bone meal, makes a good top-dressing.

Gloxinias started now will furnish nice decorative plants by May. Set the bulbs in flats of sandy soil until they have started. The growing compost should be light and rich—1 part fibrous loam, 1 part leaf-mold, 1 sand, and 1 old hot-bed manure, or sheep manure. Shade the plants as the sun gains power.

The foliage of that wonderful terrestrial Orchid, Calanthe, will now be all off the plants, and little moisture is needed at the roots. They should be afforded a night temperature of 65 degrees.

Cattleya Trianae will flower during the month. It needs to be kept somewhat dry during its flowering period. A temperature of 50 degrees at night is enough.

Gardenias may be propagated now. The young tips of the flowering shoots make good cuttings. They require a closed frame with plenty of bottom heat and moisture. Spray frequently overhead to attain this end. When rooted, pot into equal parts of loam and leaf soil. Add bone-meal in later pottings. They require plenty of light and a night temperature of 60 degrees. Keep growing freely until time for benching in June.

Annuals and Perennials for Early Sowing

Seeds of such annuals as require early sowing to be ordered at once and sown when received. Clean pots, pans, and other receptacles is old advice worth repeating. With fine seeds like Petunias, Lobelias, Fibrous Begonias, etc., saturate the soil some time previous to sowing with a fine rose on the sprinkling can, or by holding the receptacles in a vessel of water.

Many perennials will flower the first season if sown now in a warm greenhouse. In gardens where Hollyhocks are troubled with rust this treatment is beneficial. They require generous treatments in the way of compost, as a large amount of growth has to be made in a short time.

Seeds of Primula Kewensis may be sown now and grown on for flowering a year hence. Sow seeds of Pennisetum longistylum now to have good plants by bedding out time. Pot the seedlings off singly, and be careful with the water as they damp readily.

Seeds of Jerusalem and Cleveland Cherries should be sown early. If preferred, cuttings from old plants may be rooted. Avoid hard wood, taking the cuttings only from the young wood. Avoid shading the young plants; they may be grown along in the same temperature as Primulas and Cyclamen, until time for planting outdoors, or frame culture in pots.

Seeds of English Daisies, Forget-me-nots, and Pansies, sown now will make nice plants for spring planting. Seeds of Vincas, and Pentstemons, Verbenas, Aquilegias, Snapdragons, and Shasta Daisies may be sown for bedding.

Spring Flowers

Wallflowers potted last fall and wintered in frames should be brought into a temperature of 50 degrees.

Hardy Phlox lifted last fall, as well as Hardy Larkspurs placed in a carnation house will furnish new growth for cutting in four weeks.

Sow Stocks and Clarkias for flowering indoors in late spring. Start Hydrangeas for Easter in a temperature of 50 degrees. Give Gardenias 60 degrees at night at this season. Plan out now how many summer bedding plants will be needed, for propagation indoors should be commenced.

The Lorraine and Cincinnati types of Begonias may be propagated by cuttings, and the stock of Bedding Begonias of the fibrous type increased by cuttings and seed, as also Lobelias and Petunias.

Take cuttings of Fuchsia, Heliotrope, and Stevia, each from the young wood. Canterbury Bells do well in a temperature of 45 degrees; plants for Easter flowering and later may be brought in from the frames.

Start into growth Rambler Roses for Easter decoration. Forty-five degrees is enough for the first couple of weeks, and gradually increase as growth develops until 60 degrees is reached.

Start Spireas toward the end of the month. Calla Lilies in pots will need top-dressing, or feed twice a week with liquid cow manure. Asparagus Sprengerii is a prodigious feeder; and if young plants are needed sow now.

Look over the stock of Geraniums, give them room and light so that strong, sturdy cuttings may be produced for propagating later on.

Giganteum Lilies will now have several inches of growth. Keep free of insect pests, and give a temperature of 60 degrees at night.

For Cut Flowers

A change from the winter flowering Roses and Carnations is always welcome by April and May for indoor decoration, and Shirley Poppies and Hunnemannias sown about the middle of the month will give something that cannot well be bought. Neither stand transplanting very well.

Mattie Edwards Hewitt, Photo.

EVEN THE HUMBLE CABBAGE MAY BECOME A DECORATIVE FEATURE

Larkspur, Hollyhock, Roses, and other favorites of olden-time gardens seem comfortably to companion even such distant kin in the world of plants as the Cabbage. There is, in fact, something remarkably friendly and quite charming as well in this type of combination kitchen and flower garden. At the home of Mrs. Ernest Iselin, New Rochelle, N. Y.

WHAT, WHY, and HOW MUCH among TABLE VEGETABLES

ADOLPH KRUHM

Planning the Seed Order Ahead to Meet Specific Household Needs—Dependable Varieties of Good Quality Arranged for a Succession of Ample Crops with the Minimum of Labor

"WHAT'S the idea of that big row of Swiss Chard? What's this? Something more grown because it looks pretty? And who is going to eat all those Parsnips? Here we are, with a big garden, in the midst of the season and little to eat besides Corn!" Thus the complaining voice of the housekeeper, one fine August day last year, while surveying the garden.

Summarizing, the lesson means: if you garden for sentimental reasons, make a flower garden, but let the vegetable patch stand for business, the business of providing, in ample quantities, such food stuffs as the family likes best.

But here comes the rub! Naturally, no two families like the same vegetables equally well, nor would they be used in exactly the same quantities by any two households. Therefore any recommendations made must be subject to individual adjustments.

The Really Worth While Classes

IN DETERMINING, in seemingly arbitrary fashion, the relative usefulness of the different classes of vegetables, I have been guided not so much by their popularity as by their actual household service values. Most readers will agree that Tomatoes are more important than either Cabbage or Peas; that Beans yield more food per square foot than Corn; that Lettuce is more valuable to the table than Radishes. In every instance, the comparative food value of the crop from soil occupied during a certain season has been given consideration. On this basis the following classes of vegetables are selected as being of primary importance for the home garden in the order mentioned:

1) Tomatoes	4) Cabbage	7) Peas
2) Beans	5) Lettuce	8) Squash
3) Corn	6) Beets	9) Radishes

Should the garden be very small, with space for only one vegetable, let that one be Tomatoes, provided always, of course, that you care for them. Tomatoes will yield from each square foot of space more of a crop serving a greater variety of purposes in the household than is to be derived from any other vegetable.

Beans have second place because there is absolutely no waste to this vegetable. Any pods not picked while young, may be left on the plants to yield shell beans later. The plants themselves, through their roots, enrich the soil with nitrogen. A crop of Beans actually leaves the soil in better physical condition than it was before it grew the crop.

Corn, although hardly a crop for the small garden, can seldom be bought in first class condition in market. Therefore the person who is fond of Corn will devote some space to it, even at the expense of other things. Tomatoes, Beans, Lettuce, do not deteriorate in quality on the market table as rapidly as Corn. Cabbage, Beets, and Squash remain in palatable condi-

tion for a reasonable time on the market bench; but Corn, to be at its prime, should go into the boiling water within fifteen minutes of being pulled from the stalk.

How Much in Each Class and Why

PERSONAL requirements must be the determining factor in deciding the quantities to be grown. Ask yourself how much of each vegetable the household requires in the course of the season and then start systematically to provide that quantity. Take Tomatoes for instance. The average plant of a proved variety will bear about thirty pounds of fruit during a normal season between the end of July and late September. On that basis thirty plants would provide an ample supply for a family of five throughout the season.

A 20-ft. row of Beans bears about 20 quarts of pods in the course of 4 weeks. Corn averages two ears to the stalk, while it is relatively easy to figure out how many of the other vegetables may be expected from a given area. For a well balanced supply of the above named nine vegetables for a family of five or six, my recommendations are:

Fifty Tomato plants—20 of an early variety, 30 of a second early or main crop.

Ten 20-ft. rows of Beans, sowing 2 rows every other week for 5 weeks, beginning May 15th.

Twenty 10-ft. rows of Corn, planting 4 rows at a time, 2 weeks apart, for 5 weeks, beginning May 15th.

Twenty-five early and 50 late Cabbages.

Twelve 15-ft. rows of Lettuce in three varieties, making 4 plantings 1 row of each kind at a time, a week apart, in 3 types for succession.

Six 20-ft. rows of Peas, 3 varieties, planting all at one time.

Fifty feet of early Beets, and an equal quantity to be sown August 1st for winter use.

Twenty foot row of summer Squash.

Of early and midsummer Radishes as much as the appetite calls for, —but never less than 10 ft.

For the proper handling of such plantings an area of 50 x 100 ft. is required; and even then it would be necessary to do some intercropping by utilizing space between Peas for Lettuce, and by making the space reserved for Tomatoes yield Radishes and Beets early in the season. Intensive intercropping, a fine thing to theorize over, and as a *tour de force* a fascinating fancy, is in actual practice, however, worth while only on the really quite small place.

The Practical Handling of the Really Small Plot

A VAST majority of home gardeners have available for the entire vegetable garden a space of 30 x 50 ft. at the most. Under able management, this area can be made to produce an abundance of vegetable for a family of three or four, provided every square foot of soil is handled to the best advantage. By placing the early vegetables such as Radishes, Lettuce, green Onions, etc., far enough apart, succeeding crops like Beans, Tomatoes,Corn, etc., can be started right between the rows of these early vegetables even while the early crops are being produced. By using the "extra-early" maturing varieties of vegetables requiring a long time to become ready for use, such crops may be made to yield profitably and vacate the ground in time to make room for late vegetables that require but a short time to mature. For instance: starting about the middle of April with Radish, Lettuce and Onion sets, then an extra-early variety of Tomato, placed between them by the middle of May, will yield the bulk of the Tomato crop by the middle of August, when the plants may be pulled up without regret, to make room for crops of Beans, Beets, Carrots, Turnips, Cabbage, and others for fall use.

ONE OF THE STAND-BYS AMONG VEGETABLES

The popularity of the Bush Bean is amply justified by its easy culture and generous, dependable yield

Varieties That Really Serve

IT HAS ever been a delight to me to try experiments, and I like to feel that others also will tread new paths, testing out novelties and different ways of cultivation. But when dealing with a garden conducted for measured results *don't flirt with "unknown quantities"* among newcomers. By all means devote a bed in the garden exclusively to the ever interesting novelties. But hide that bed behind a smoke screen when the housekeeper comes to take stock of resources. Her concern is only with those varieties that will really perform and deliver the vegetables in proper quantities and of good quality, and *on time!*

Each individual gardener must make his own final selections in varieties, for the choice is wide, even in so-called limited classes. The gardener's choice will be governed quite as much by soil and climate as by personal likes and dislikes. For instance, north of Binghamton, N. Y., it is folly to attempt to grow a late Tomato, unless the seeds are sown indoors in February. Again, if you have rough, stony soil or soil having a hard subsoil, it is not wise to attempt the growing of late, long varieties of Beets, Carrots and other root crops. You simply won't like the product after you grow it.

But I do promise that the varieties here recommended will perform as scheduled, and this promise is based on performance records in my own gardens (in various localities) over a period of ten years at least.

TOMATOES. The first two extra-early kinds are listed for the benefit of the man who handles the really small plot and for no other reason. Plants

of both Earliana and June Pink, set into the garden by May 30th, will have yielded the bulk of the crop by August 15th. The fruit they yield *after* that does not measure up in value to crops of Beans, Beets, Cabbage, etc., that the same ground may bear between August 15th and frost.

Extra Early: Sparks' Earliana, red; June Pink, purple or pink.
Second Early: Bonny Best, red; Livingston's Globe, Purple or pink.
Main Crop: Livingston's Stone, red; Trucker's Favorite, purple or pink.
Late Crop: Livingston's Coreless, red; Ponderosa, purple or pink.

Beans. Recommendations are confined to the dwarf or Bush varieties because they produce crops within strictly measured time and they do not demand extra attention in fussing with poles or supports. As among the Tomatoes, we are again confronted with a color problem—both green and yellow podded sorts being available. On the question of differences in quality as associated with color, even experts agree to disagree and personal preferences—or prejudices—prevail. Here are the one-hundred pointers:

45-day Maturity: Extra Early Red Valentine, green pod; there is no equally early yellow pod.
60-day Maturity: Bountiful, flat green pod; Stringless Green-podded, round pods; Live Crop Wax, yellow flat pod; Brittle Wax, yellow round pod.
75-day Maturity: Refugee Wax, yellow round pod; Stringless Refugee Green Pod, semi-round.

These varieties, with the exceptions of Red Valentine and Refugee Wax, are perfectly stringless at all stages of growth —so why grow stringy beans? By "60-day Maturity" I mean that sixty days after sowing seeds you may gather a fair, first picking of about two quarts of pods from every ten feet of row.

Corn offers an even wider choice in varieties maturing at different times, but the demand for real quality automatically works for the survival of the fittest. Half the available varieties do not deserve a place in the home garden. Personally, out of hundreds of varieties and strains played with, I have settled down to four:

Peep O'Day for *extra* early—at a slight sacrifice of quality.
Golden Bantam for early and midseason; also for repeated planting.
Seymour's Sweet Orange—to bridge the gap from early planting between Golden Bantam and the following.
Howling Mob—for late midseason (when many guests have to be taken care of.)

Were it not for certain limitations in size and that, very early in the season, one is apt to overlook certain deficiencies in quality, I would grow nothing but Golden Bantam. That, however, is a strictly personal attitude.

Cabbage. An early, a midseason, and a late Cabbage will meet requirements for every home garden. Though I have tried many strains of Early Jersey Wakefield I have yet to see the advantage of gaining 10 days at the expense of losing five pounds of Cabbage. You may cut 5-pound heads of Early Jersey Wakefield 85 days after seeds were sown, but you may cut 10-pound heads of Copenhagen Market or Enkhuizen Glory within 95 or 100 days and be the gainer. The difference in quality is negligible. Enkhuizen Glory prefers clay soil. A good second early is Early Summer, while either Premium Flat Dutch or Livehead will prove reliable late standards.

Lettuce continues to be the biggest problem of the salad gardener. Just why I do not understand, for, given two things, the Lettuce plant is a healthy weed. It must have quantities of easily available plant food and receive liberal cultivation. These two conditions, combined with the proper varieties for the different seasons, all seeds sown the middle of April, solve the problem as follows:

Black-seeded Simpson, loose leaf, in May.
Wayahead, butterhead, in June.
All Seasons, butterhead, in early July.
Iceberg, crisphead, in late July.
Wonderful Crisphead, in early August.
Paris White Cos, when Head Lettuce goes on a strike.

Beets. Here I am inclined to be quite arbitrary. Grow Crosby's Egyptian for extra early, and Detroit Dark Red (60 days) for succession early, midseason, and late.

Peas. The problem is quite complex. Because the trend in buying during the past decade has largely favored the dwarf kinds for home garden purposes, I am confining selections for present purposes to the dwarfs, although the tall growing Telephone type has distinct merits where brush or supports are available. Among dwarfs, Little Marvel continues to lead as the paragon of quality, productiveness, and dependability. But its season is short. It should be combined with Market Surprise, a wrinkled first early 4-ft variety, and Thomas Laxton, the highest attainment of the early wrinkled 4-ft. kinds. Here is a perfect succession of delicious dwarf-vined Peas:

Market Surprise, 50 days, 4 feet.
Little Marvel, 55 days, 18-24 inches.
Thomas Laxton, 60 days, 4 feet.
British Wonder, 70 days, 3 feet.
Potlach, 80 days, 4 feet.

And please remember, when sowing Peas:—sow enough! A 15-ft. row of any of these prolific kinds will not yield more than five quarts of pods at any one picking; that means about two quarts of shelled Peas and these dwindle mysteriously during the process of cooking.

Squash. Cocozelle Bush for early, and Vegetable Marrow or Hubbard for late, will fill the bill for Squash which, by the way, is in a fair way to greater appreciation as a food carrying great quantities of vitamines. This is particularly true of the early Summer Squash.

Radishes. I suggest that you do the following: clip together all the variety names of all Early Round, Early Olive-shaped, and Early Long kinds from about a dozen catalogs, put them in a box or bag, shake, and pull out any one. Chances are it will be as satisfactory as any of the other fifty-six. I like them all, but prefer:

Rapid Red; round, 25 days.
Scarlet Globe; round, 30 days.
French Breakfast; olive-shaped, 30 days.
White Icicle; long white, 35–40 days.
Cincinnati Market; long red, 45 days.
White Stuttgart; long midseason, 60 days.
White Chinese; late oblong, 75 days.
Black Spanish; round black, for late fall and early winter.

Seed Ordering Simplified

LOOKING upon each seed as a productive unit with firm limitations, it is not difficult to estimate about how many seeds you'll want to attain certain ends. Among the nine essential vegetables discussed here, Cabbage, Lettuce, Beets, and Radishes stand for one food plant from every seed. Since all the seeds are small, averaging from about 750 seeds in Beets to more than 2,000 seeds in Lettuce per ounce, it may be seen that an ounce of each of these is a great plenty for home garden purposes. As a matter of fact, where three or four varieties are recommended in one class, for perfect crop succession, a ten-cent packet usually contains a liberal enough fraction of one ounce to provide for repeated sowings. The same holds good in even greater measure with Tomatoes and Squash where the yield per plant is greater.

When it comes to ordering the bulkier seeds, like Beans, Corn, Peas, the following facts will help in arriving at requirements.

Beans average $2\frac{1}{2}$ ounces per packet, containing about 150 Beans. Spaced 4 inches apart in the row, one pound of Bean

seeds will sow about 250 feet of row, standing for a potential maximum yield of 50 quarts at one picking or $2\frac{1}{2}$ times that much from beginning to end of the yielding period.

Corn is slightly smaller grained, the packets, while not larger, containing on an average, more seeds. Yet Corn is seldom spaced in the row, the work being too tedious. An average packet will cover 25 feet of row, sown thinly. Only 25 plants are permitted to develop, yielding at best, 50 good ears. Multiply this by five or six and you arrive at what one pound of Sweet Corn will do, provided the cutworms behave and frost stays away.

The problem of Peas is the most complex because of the great variation in yield of pods per plant dependent upon both soil and season. The best hope of any of the pedigreed dwarfs mentioned is an average of 8 pods per vine. It takes 8 ounces of seeds for every 20 feet of row, seeds sown thickly. With a good "stand" and a fair "set," you should gather about 8 quarts of pods from every 10 feet of row, from start to finish. In terms of the cookpot, that means about 3 quarts of shelled peas; or one pound of seeds to be sown for every 12 quarts of shelled peas desired.

A hint in conclusion! The seeds are the cheapest item in the garden's cost. It's awkward to run out of seeds in the middle of the row, so order liberally! And as it's disappointing to have one's labor rewarded by a poor product, buy the choicest strains obtainable, regardless of price.

MAKING A GARDEN PLAN FOR YOURSELF

CARL STANTON

USUALLY the new garden builder finds the house already placed, and will have to accept its position and work from it. If, however, he is beforehanded enough to be planning the grounds prior to building, he can pick the best location for it.

The choice of the spot for the house depends upon several factors: obviously a home ought to be placed so that the living rooms will get the best views, if possible; it should be turned so that the service portion will be at the back, or on the northern and eastern sides; and to allow as much "sunny side" as possible, the house is best placed near the boundary line to the north, and within 20 or 30 feet from the street (provided, of course, that other conditions warrant it). Give the house the best location that your grounds afford, and develop the rest of the estate with reference to it.

A cardinal fact to be ever borne in mind when taking steps toward making any sort of landscape design is the beauty of simplicity. An atmosphere suggesting "rest, quietness, and peace" is the goal of all such effort. With this thought in mind avoid all that is harsh or gaudy; even an underdeveloped property may be preferable to the ornately overdeveloped estate.

Before much can be done in the way of designing, it is necessary to have a plan of the grounds as they are now —just a simple drawing that shows the boundary lines, the location of any existing features (buildings, drives, trees, hills, etc.) the direction of the good views, to be retained open or perhaps emphasized, and of course those to be shut from sight. Locate the points of the compass on the plan, as much of what is right or wrong in designing hinges on their relationship to introduced features.

Frankly open to the passer-by with the walk leading direct to the main door, is usually the most practical treatment of the approach on the small plot

The land surrounding the dwelling is divided into three parts—the service portion, the "front lawn," and the living area. The service portion including the drives, walks, the garage, the clothesyard, etc. (all those parts which are necessary to the proper functioning of the estate, but which we do not expect will add much to its beauty) should be determined first of all, as these things are fundamental to the comfort of the occupants and affect the every-day activities. This area is to be kept as compact as possible to save space, and so that it may be readily shut from view of the living area. In the accompanying plan and for our present consideration, it has been placed on the shady side of the house, in order that it may be hidden from the rest of the estate, and so that people in the garden and on the piazza will not be bothered by the noises of the kitchen, etc., and by delivery wagons coming to the house. This arrangement allows about as much land on the southern side of the house, the 'sunny" side that we wish to develop, as it is possible to have.

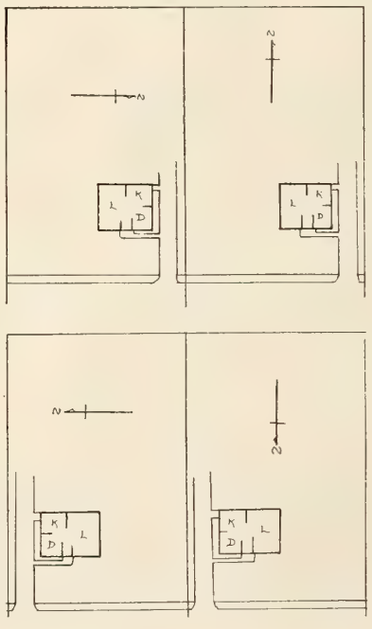
THE front lawn area is that portion of the property that your fellow townspeople see as they walk by on the street. This has been made only large enough to provide a setting for the house, and to bring it far enough away from the street with its dust and noise. While this part is comparatively simple to develop, there are enough ways of doing it to allow for plenty of originality in the design.

It is in the planning of our own private living area, however, shrubs, and perennials as a screen, when it is properly designed; as it allows such a great latitude in the choice of material and in the laying out that almost any desired effect can be secured. The detail of such a border must be designed to fit the actual location — it is not practical to make a plan that will be a universal panacea. If it were so the matter would have been settled beyond dispute long ago.

Methods of carrying out the rough outline are also shown.

Taking things as they are found ordinarily, the front lawn must be handled with restraint, any special garden features coming into play elsewhere on the plot

that there are unlimited opportunities to show individual skill. First we must try to secure a certain amount of privacy, without shutting out any fine views that we may be fortunate enough to have. The plan shows the places where the screens are to come that will hide most of the undesirable views. It is, of course, impossible to shut an objectionable piece of landscape from sight of all points of the property, so we strive to hide it from the points that will be the most used. These would be the piazzas, any terraces, the places where we intend to put seats, etc. On the specimen plan (page 235) the spots that command the fine views in the distance have been marked so that we will not by any chance block them out. The privacy can be secured by the use of hedges, trees, shrubs, walls, fences, etc., and we can take our choice. Whatever is used must be kept in harmony with the house. The great trouble with walls and hedges is that when they are tall enough to hide the inside from prying eyes, they are liable to be so tall that they will obstruct our good views. For the average place I know of nothing that can equal the "mixed border" of trees,



WHERE TO PLACE THE HOUSE

These diagrams indicate the best placing on the plot (where choice is open) according to the aspect to get full advantage of sunlight in the garden

In one with tall trees to supply the shade and to act as screens; and a shrub border for privacy. The good views have all been saved, and several of them "framed." Two trees shade the house, and three (preferably Elms) the front lawn and the sidewalk. The shrub border used in this plan has its outline composed of long sweeping curves, which allow it to be wider in some places than in others, and give a chance to frame "surprises" in some of the bays into which one cannot see until directly opposite them. One should be careful in planning a border of this sort not to make it so large that it cramps the rest of the garden. On small lots it is better to have the outline of the bed a straight line, and depend on the variety of material used to give the best effects.

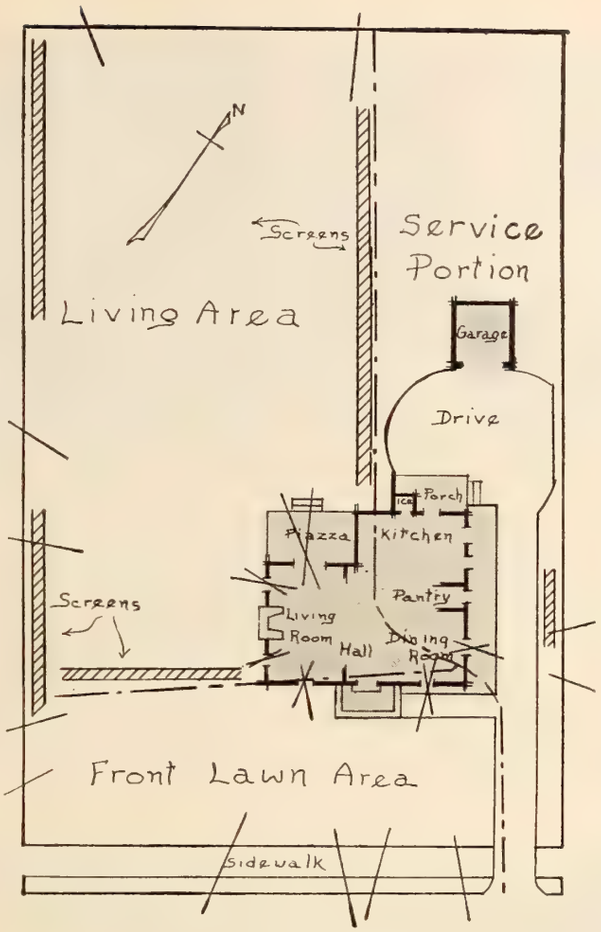
The house is made to harmonize with its surroundings by plantings near its base. These are usually grouped at the corners for the best effects, and may be placed so that they directly touch the house or there may be room left between for a path, or for the air to circulate. Do not plan too many small beds for the foundation planting, but rather let one or two larger ones do the work.

This is one of the many cases where it is better to err on the side of underdoing rather than overdoing. A Japanese Barberry hedge is used to keep animals and people from walking on the front lawn.

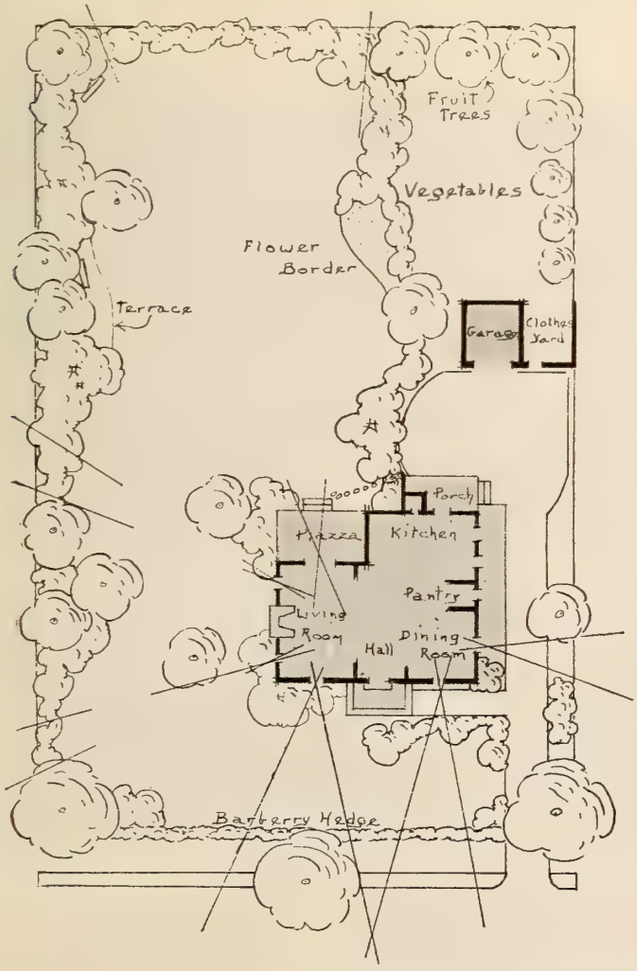
In this plan the flower garden consists of a small informal border of perennials, enclosed on three sides by shrubs. It has been placed so that it will get the sunshine during the greater part of the day; and as it is fairly near the house, one can enjoy its beauty from there or from the small raised terrace opposite. This terrace, by the way, would be a good place to make a "surprise" of a bed of hardy Ferns, as they could be banked in around the seat there, and should grow well in the shade. In locating the garden, note this point: it should not be placed where its bright colors will distract the eye from any charming bit of scenery beyond, but rather placed where it will attract the eye to itself instead of letting it wander to some unsightly object beyond the boundary and which you are powerless to hide.

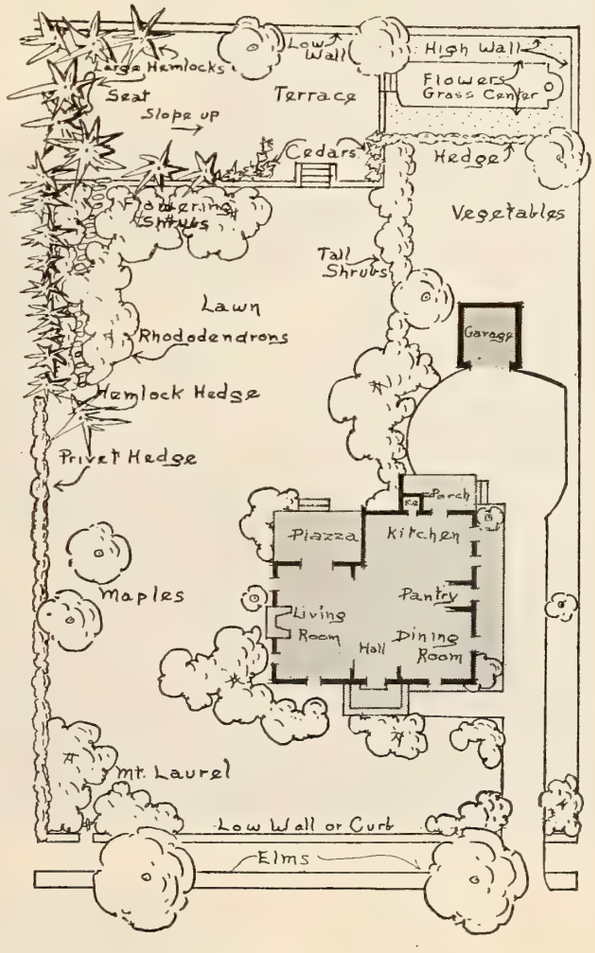
ANOTHER method of carrying out the general idea has the service portion and the front lawn area much the same, except that a low wall replaces the Barberry hedge along the street front; the shade trees are arranged a little differently; and the large corner bed of the foundation planting has been placed away from the house to allow for a walk between, and to bring it far enough out into the lawn to make it serve as a screen for the living area. One would not want the grocer's boy to get into the habit of using the turnstile in the corner, but it would be very handy to anybody hurrying out in that direction.

A feature is made of the Hemlock hedge, and a grove of the same material. A stepping-stone walk between the hedge and a bed of flowering shrubs gives a chance for various surprises (fancy Ferns, wild flowers, possibly a seat, or a bird-bath), and leads one out to the terrace in the rear where there is a good seat. Here one may either admire the view in the rear, or the sunken garden straight ahead. The garden is enclosed on two sides by a wall, on the third by a hedge, and on the fourth by the retaining wall of the terrace. By such means is variety obtained in our garden enclosures. Looking from the house,



THE GENERAL LAYOUT.
Two elaborations are shown below





A simple massing of screen planting, etc., on the left. The detailed development on the right is but another suggestion of details for carrying out the general plan

the good view in the rear is enhanced by the groups of Cedars, and by the two deciduous trees on the terrace.

Some cardinal principles to be regarded in the making of any design for a garden are enumerated below and all details should be developed with due regard to these governing factors.

Keep the drive as short as possible, except where doing so will bring it too much into prominence in the scenery.

For the small place plan a straight drive; but where the length is more than one hundred feet it is usually better to make it curved. These curves should not be abrupt, but very gradual and easy. When making curves, it is the rule to have some apparent reason for them, such as a group of trees or shrubs, or a knoll.

Keep the lawns open! Especially avoid planting one shrub, or making a flower bed, or a "half-barrel" in the centre of the lawn.

Any flower bed is better if it is enclosed. For this purpose we may choose either a wall, a well designed fence, a hedge, shrubs, or combinations of these. The small informal border of flowers may be enclosed on three sides if it is set into one of the bays of the shrub border.

Usually the vegetable garden would be placed in the service portion of the place, but if it is well kept, and can be subdued to its proper relation, there is no reason why it cannot open off the living area. It is a real delight to many gardeners to have a chance to look over a well kept vegetable garden. Fruit trees, especially Apple and Pear, may be used in the living area, serving the dual purpose of supplying fruit and shade; but, if they be so used, take care that the fruit is kept picked up from the lawn.

Do not so plant that a small place is entirely surrounded or it will be hot and stuffy in summer, and will appear much smaller than it need.

Remember that the more "surprises" one can develop on an estate the larger it will seem.

In designing the foundation planting, do not plan to hide the entire base of the house, as glimpses of the stone work are necessary to give the impression of strength and stability that are not attainable when the house seems to sit upon a mass of waving greenery; and do not rely on young forest trees that grow big.

Do not cut up the lawn with paths. If the grass is kept well trimmed in the living area there is no need for paths. The service walks should be as short as possible, and where it is necessary for them to cross the lawn, stepping stones may be effectively used.

Two points that I wish to impress above all others are:

1, Keep all the planting and planning in direct relation to, and in harmony with the house in mass and form; 2, *keep everything as simple and as restful as possible.*

A WELL PLANNED MODERN GARDEN

The mixed border of shrubs has trees in the background to give height and a broken skyline; herbaceous plants are massed along its sinuous edge to the open lawn, inviting play for the individual owner's fancy and easy access of the visitor. The outside world, near at hand, is effectually cut off from unwelcome intrusion

I. EGYPTIANS OF THE TWELFTH DYNASTY PICKING OKRA (left) AND HARVESTING FIGS (right) WITH THE DUBIOUS ASSISTANCE OF TRAINED MONKEYS

A PICTORIAL HISTORY OF THE GARDEN

H. H. MANCHESTER

EDITORS' NOTE:—It is amazing to find the Egyptians nearly six thousand years ago raising Cucumbers, Onions, Carrots, and other staples still grown by us to-day; to come upon them busily irrigating, transplanting, cultivating their gardens with all the zest and much of the skill of a twentieth-century gardener. For all they lived so very long ago and so very far away we feel ourselves their kin, linked to them by a fundamental instinct common to both—the need and the joy of delving.

It is pleasant to reflect that the beauty of the garden has long been a source of delight to men in many lands, and high tea on the terrace is lent an added piquancy by the memory of Asurbanipal and his queen dining out-of-doors in ancient Assyria with similar enjoyment—and greater state—some twenty-five-hundred-odd years back.

To follow the footsteps of the garden from its earliest beginnings up through the ages; to trace its passage from Egypt to Asia Minor, Greece, and Rome; to watch its development in the hands of Mahommedan and mediæval monk is a superlatively fascinating pursuit to gardener and antiquarian alike who will find in Mr. H. H. Manchester an able and dispassionate guide during the coming months when subsequent articles of this series are to appear.

I. AT THE DAWN OF HISTORY

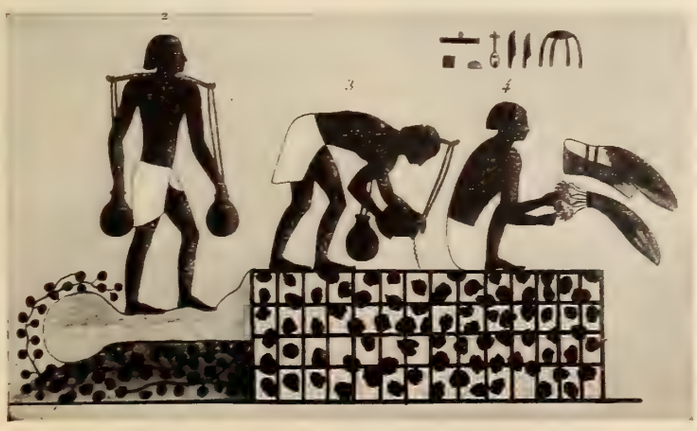
Gardening in Ancient Egypt—Defeating Drought by Irrigation—Utility and Religious Significance

HOW old is the garden? When did the idealist of the family, which in this case was just as likely the woman as the man, become dissatisfied with what could be gathered from the garden of nature, and establish cultivated enclosures?

A few years ago it would have been impossible to assign any instructive historic limits to the antiquity of this step, but the amazing wall frescoes in the cave of Altamira and other caverns of the Pyrenese district, discovered about 1900, suggest that when they were made, perhaps 20,000 years ago, man was still living in the glacial age, and agriculture had not yet begun. The remains indicate that the cultivation of the soil did not begin before the New Stone Age, probably 8,000 or 10,000 years ago.

At the earliest dawn of history in Egypt, however, the records prove that the garden was already a recognized feature of life along the Nile.

Methen, one of the governors of the Third Dynasty, had a sketch of his life, which is the earliest biography known, inscribed on his tomb at Sakkara. He began life as a scribe, then became overseer of a storehouse, and finally rose to be governor of several districts in the Delta. One of the favors which he received



II. Watering Vegetables in Egypt; as usual in these very early drawings the flat surface is represented full view. Twelfth Dynasty

III. An Egyptian watering his garden by means of the shaduf, one of the earliest inventions for lightening heavy labor and which we of to-day still find in modified form in the familiar well-sweep of country districts

from the Pharaoh was a garden, the notice of which in his tomb runs as follows: "There was presented to him as a reward . . . a villa 200 cubits long, and 200 cubits wide, built and furnished; choice trees were set out, an immense pond was dug therein, figs and vines were planted."

Thus in the Third Dynasty, anywhere from 5,000 to 6,000 years ago, we find the Egyptians establishing walled-in gardens, not merely for utility, but for ornament, and, as we shall see, for religious purposes.

One reason why this custom began so early in Egypt, was that the whole country was essentially a cultivated one. The space between the desert plateaus was comparatively narrow, and there were practically no wild forests. Though the annual overflow of the Nile fertilized the land, the lack of rain early led to a system of ditches and watering. Thus the cultivation of trees as well as plants was an artificial one, all of which made the establishment and care of the garden merely one phase of the year's labor.

By this period the Egyptian had developed the belief that the soul would live as long as the mummy existed. For this reason they built rock tombs and great pyramids to protect the mummy. In the Fourth Dynasty, which reigned at Memphis, the walls of the tombs were covered with pictures of offerings and laborers at their work, with the idea that doubles of the gifts and workmen would be at the command of the soul in the Kingdom of Osiris. These paintings, very fortunately for us, cover the most important phases of Egyptian life, though garden scenes at that period are extremely rare.

A tomb painting of the Fifth Dynasty illustrates the gathering of grapes and figs, and adds greater human interest to the scene by picturing men trying to scare the birds away from the ripe fruit. (Fig. IV shown below.)

A picture which strongly emphasizes the religious use of flowers, appears in a tomb of the Fifth Dynasty, where row upon row of servants are bearing flowers and other offerings to the soul. (Fig. VIII, page 240) Prominent among these flowers is the Lotus, while the stalks and leaves of the Papyrus may also be discerned. The scene suggests how much the ancient Eygptian must have thought of his flowers, since they were pictured so prominently among the offerings to the soul.

IV. FROM A TOMB PAINTING OF THE FIFTH DYNASTY (EGYPT)

The twentieth-century gardener may be amused to find his predecessors some five or six thousand years back busily engaged in scaring the birds away from the precious harvest of grapes and figs which are being gathered

It is more than probable that the modern custom of laying flowers on the coffin and the grave may be traced back to such offerings of flowers in Egypt at practically the beginning of history.

In addition to the evidence of the pictures, we find flowers playing a part in the ritual by which the priests assisted the soul in attaining life and power in the other world.

In early passages of the Book of the Dead which appear as texts in the pyramid of Pepi, we find the following somewhat mystical address to Pepi's soul: "Hail, Osiris (or soul of) Pepi, the eye of Horus hath been offered unto thee: it is sweet to the sense, and it accompanieth thee.

"(Here offer two bowls of fruit of all kinds)." This is an instruction to the priest.

"I count them for thee.

"(Here offer two bowls of spring fruit, flowers, and vegetables)." Also a direction to the priest.

Even the lowly Onion had a similar religious significance, for we find in the pryamid of Unas, in the Fifth Dynasty, the following lines in the liturgy: "Osiris (soul of) Unas, the white teeth of Horus are offered unto thee, so that they may fill thy mouth.

"(Here offer five bunches of onions.)"

The pride of the Egyptian in his garden was just as evident in the Sixth Dynasty. We find Harkuf, for example, who was one of the governors of the south, note on his tomb as one of his accomplishments, "I constructed a villa, I hung the doors, I dug a pond, and I set out trees."

This building of a reservoir, as appears from the records, and as follows naturally from the character of the country, seems to have been a necessary first step in the construction of any garden of importance. But great as the labor involved in the garden must have been, the Egyptian noble apparently did not feel his mansion complete without it.

V. FROM A TOMB AT THEBES

A much mutilated plan of an ancient Egyptian garden with a Lotus-fringed pool at the centre in whose waters ducks, geese, and fish seem to swim happily

A tomb painting of the Sixth Dynasty illustrates a harvest of olives. (Fig. VII, page 240) These were especially common to the south, and at even a very early period the region bordering upon Libya was famous for them.

VI. MAKING AN OFFERING TO THE SPIRIT OF A TREE

The ancient Egyptian held the trees, so rare and so difficult to grow in his naturally forestless country, in great veneration. The peasant is here making an offering to the Wild Fig

After the Sixth Dynasty, the power of the kings at Memphis waned, and the country was not again brought under one rule until the Eleventh Dynasty, which came into control at Thebes, perhaps 4300 years ago.

An interesting passage which gives a suggestion of what were considered the most important qualifications for a garden, comes at the end of the tale of Sinhue in the Twelfth Dynasty. As a reward for his valorous deeds, Sinhue narrates how the king gave him an estate:

"He made me choose for myself of his lands,
Of the most desirable of that which he possessed . . .
There were figs in it and vines;
More abundant than water was its wine;
Flowing was its honey, bountiful its oil;
All fruits grew upon its trees."

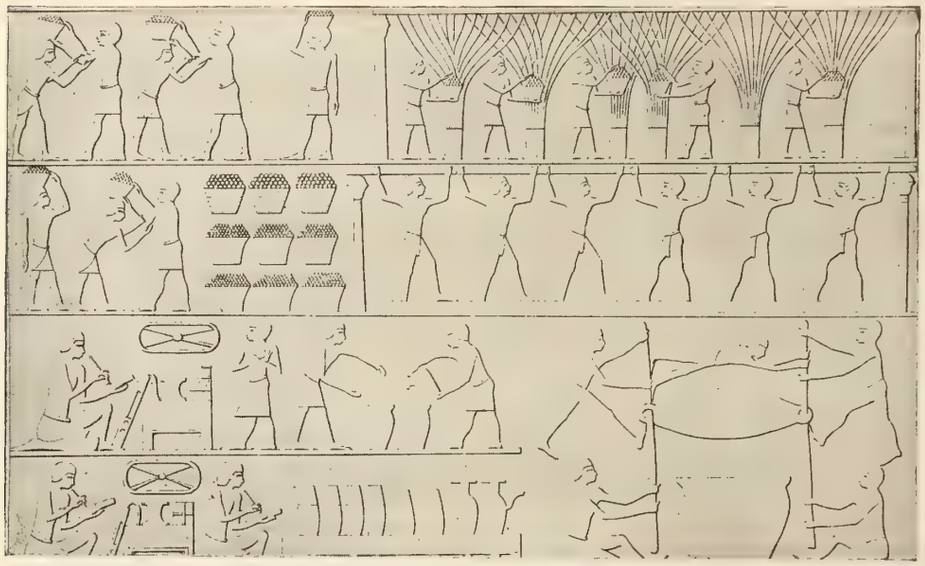
Several interesting tomb paintings from the Twelfth Dynasty add considerably to our knowledge of the garden of that period.

One of these portrays four men picking fruit from vines or shrubs which are arranged in the form of an arch. At first glance these appear to be Grape vines, but closer examination of the fruit in the baskets is convincing that it cannot be intended to represent grapes. One Egyptologist has identified it rather conclusively as okra. The yoke on the shoulder of the woman in the picture was a common Egyptian device for carrying a heavy load.

One of the most curious of all Egyptian pictures comes from the same tomb. (Fig. I, page 237) It shows trained monkeys assisting two men in gathering figs. It will be noted, however, that two of the monkeys seem to be helping themselves as well

as their master. It is worth observing that the Fig tree which is in the background is drawn smaller in proportion than the men, which is about as far as the Egyptians went toward representing perspective.

A third detail from this tomb, illustrates the watering and picking of vegetables. (Fig. II, page 237) Here the artist, as usual when the Egyptians wanted to represent a flat surface, turned the bed up on edge, so that it could be seen as if from above. The workman carrying water is using much the same shaped yoke as was employed for carrying baskets of fruit and for other purposes.



VII. GATHERING AND PRESSING OLIVES

The operations pictured above are from a tomb painting of the Sixth Dynasty, Egypt

Even before this period, however, one of the first great inventions had come into use to lighten the work of irrigating. This was the shaduf, which we find illustrated in a tomb painting of this period. (Fig. III, page 237)

In the scene we are reproducing, the shaduf is sketched only incompletely. It was something like the well-sweep which is still to be found in some country districts. It consisted of a long pole suspended so that the heavy end would just about equal the light end in weight when the weight of the lighter one was increased by a bucket of water. In working it, the laborer pulled down the empty bucket, which was fastened by a rope to the light end of the pole, and when he had filled it, let the balance of the pole help him raise the bucket from the pond or ditch to the field which was to be watered.

In the picture the pond is set up on edge in the Egyptian fashion. A tree nearest the pond is very probably the Wild Fig, or so-called Egyptian Sycamore. The tall tree at the right is the Dom Palm, which may be distinguished from the ordinary Date Palm by the fact that the trunk is branched at the top. The small tree in the middle is perhaps what was known as the Acacia. The earth is raised around the base of the trees to hold water in a hollow next to the trunk.

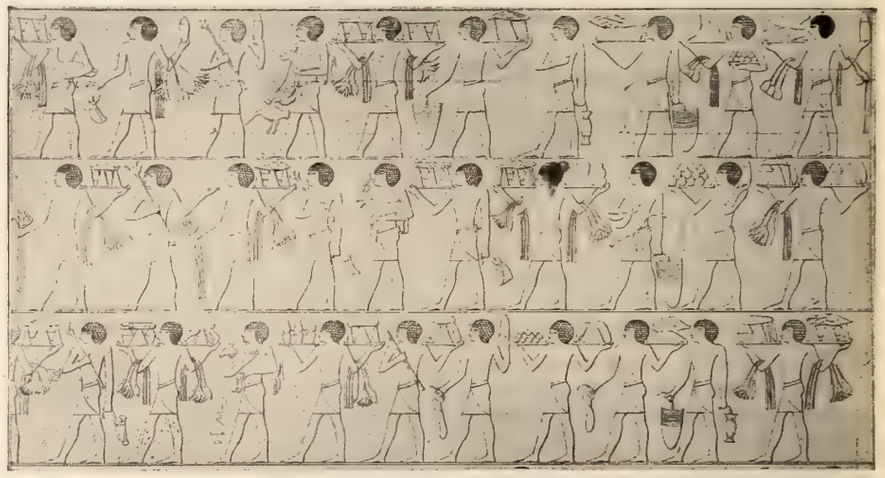
The Egyptian seemed even fonder of flowers at that period than during the Old Kingdom at Memphis. There are practically no illustrations of offerings in which flowers are not depicted. Other tomb paintings prove that the Lotus and other flowers took the place of our perfume. In a boudoir scene, where one servant is making the lady's toilet, another holds a Lotus up to her face so that she can catch the scent. At a banquet, likewise, servants are portrayed presenting flowers in a similar way to the guests.

The veneration which the Egyptian had for trees in that forestless country is indicated by tomb paintings which illustrate peasants actually making offerings to some tree. This was often a Wild Fig, or so-called Sycamore, which grew alone in some sandy spot, in a way which to the peasant seemed mysterious, but might probably be explained by its roots finding a strain of water from the Nile. In our illustration (Fig. VI, page 239) the tree is a Wild Fig, which the rest of the painting would show stands at the far end of a field of grain, and was perhaps thought by the peasant to have power over the water supply of the field.

It may seem surprising that a few actual remains of trees and plants have been unearthed in the tombs of the Twelfth Dynasty, more than 4,000 years old. These include the Date Palm, Dom Palm, and Argun Palm; the ordinary Fig and Wild Fig; the Balanites or Heglig, and the Acacia. Among the vegetables, a few specimens of Peas, Beans, Seeds of Cucumbers, and very much shriveled radishes have been preserved throughout the intervening centuries. These were discovered at Kahun, which was a city made up of workmen on some of the great building enterprises of the period, and perhaps represent remains of the provisions which were furnished them monthly as the pay for their labor.

VIII. OFFERINGS FOR THE SOUL

The religious use of flowers and fruits was apparently quite universal in ancient Egypt. Tomb painting of the Fifth Dynasty shown below



A partial idea of the Egyptian plan of a garden may be gathered from a very much mutilated painting in a Theban tomb, which was placed there, no doubt, in order to assure the soul the same delight amid trees and flowers in the other world as enjoyed in this. (Fig. V, page 239)

In the centre is a pond which is drawn on edge in the Egyptian style. In it may be discerned geese, ducks, and fish, as well as the flowers and buds of the Lotus. These, however, are pictured in profile, with an inconsistency in relation to the pond which was usual in all such Egyptian representations.

The banks of the pond are represented by a flat surface, but were probably sloping, and are covered with plants and shrubs which are shown in profile. Surrounding the pond are rows of trees, which are drawn, at the left, with the roots toward the pond, and the branches pictured in profile. Among these may be recognized the Date Palm, Fig, and the so-called Sycamore or Wild Fig. The outline of the Sycamore was, however, used by the Egyptians as a general sign for trees of that character and seems to be intended here to represent various species.

The Garden of Mrs. Meredith Hare at Pidgeon Hill,

HUNTINGTON, L. I.

Its air of repose and delightful quaintness reminiscent of bygone years make it an ideal setting for the folk of Du Maurier's day who seem here perfectly at home. Through the courtesy of Mrs. Hare and her warm-hearted interest in stricken people everywhere, "Peter Ibbetson" was recently played in the garden by the Paramount Pictures under the auspices of the Film Mutual Benefit Bureau to aid the work of the American Committee for Devastated France

WHEN THE GARDENER BUILDS HIS HOME

ESTELLE H. RIES

Housing the Plants as an Essential Feature of Your Initial Plan—The Bay Window, the Sun Room, the Greenhouse and Other Possibilities for Continuing Your Garden Indoors

THE decorative possibility of plants in and about the house and a liking for their care and propagation are recognized essentials of most present-day households. Flowers need no longer be confined to seasons when they will grow out-of-doors in these latitudes, but may be enjoyed throughout the entire twelvemonth. People who love green things about them find it imperative to provide a suitable place for the growing of plants and flowers indoors; a location convenient and accessible which at the same time actually adds to the charm of the domestic interior. So in building the new home it is well to bear in mind the necessity for such structural provisions. To the member of the family who sincerely cares for flower culture, these features will be as interesting and in a sense as essential as the heating system, the plumbing, or the electric fixtures of the dwelling proper, and a thorough consideration beforehand of the various problems involved serves to prevent errors costly to correct in a completed building.

A LOGICAL place for the window garden is afforded by the bay windows of the living-room or of the large hall sometimes found in the modern house. Like any other place designed for special usage, the window garden can be more economically and conveniently installed at the outset than later on as a troublesome alteration.

A southern exposure is, of course, preferable, though a western or eastern are also desirable. When installing a bay window off the dining-room for the special purpose of a window garden, it is best to extend it beyond the usual depth and to make it at least four feet deep. If possible, lay the floor of this space with square red tile set in cement and either inclined in one direction or centrally with a drain so that surplus water used in sprinkling the plants may be readily drained away and undue dampness avoided. It is also well to tile the wall from floor to window sill. Boxes are then made to fit the space allotted for them and should be lined and provided with facilities for drainage.

Make provision for double windows to exclude the cold drafts of winter, with ventilating panes at the top and bottom, and place in the ceiling as a ventilator some small form of register with cords leading into the room so that it may be opened and shut to control the movement of air. Perhaps the best means of heating the window garden is by hot water, as this more nearly approximates the graduating character of the outdoor atmosphere; any method selected being placed so as to maintain the most equable and easily regulated temperature, in control of which a thermostat will prove serviceable. It is desirable to have a glass door in front of the bay window to further regulate the temperature about the plants when the main part of the room is too warm or too cold. Window shades drawn down at night help to keep out cold air; the Venetian type with wood slats is recommended.

FLOWER-POT brackets add much interest to the window garden. They may be attached to either walls or ceiling, must be strongly constructed, preferably of wood, and capable of holding double the weight put into them. A most useful type is that with movable arms which may be swung out of the way of curtains. The absence of all metal likely to rust is also desirable.

Simple stands of mahogany, wicker, and other materials are also available for indoor use. About nine inches is the correct depth no matter what the height and width. A metal lining with holes for drainage, space between the metal and wood into which surplus water may filter, and handles for lifting are indispensable features of any well-equipped plant-stand. Do not rest wooden window boxes directly on the sill; in the absence of an inside metal lining, raise the box an inch or so by strips at the ends so that there is a space between the bottom and the surface upon which it rests. Otherwise it stands in water, contrary to the best interests of the plant.

Jardinières are, of course, primarily ornamental in purpose and are made not to hold soil but the pot in which the soil is placed. They are nearly all glazed and not provided with outlets for water. In addition to being ornamental they also serve to catch the drip from the pot and to prevent excessive evaporation. If the space is packed with sphagnum moss the plant may be much benefited. Whatever the type of vessel in which plants are grown, there should always be openings in the bottom to permit the escape of the surplus moisture. When the proper drainage is not supplied, the soil becomes water-soaked and sour, the air is prevented from coming in contact with the roots which proceed to decay; the plant droops, loses its leaves, withers, and finally dies.

For individual plants, a saucer of the same material as the pot is part of the equipment. Some pots come with such saucers attached but besides being unwieldy, these are highly undesirable because of the lack of drainage. A pan of gravel may well be used, for this absorbs the surplus water from the pot and slowly evaporates it into the room, keeping the surroundings suitably moist.

Hanging baskets are graceful and decorative adjuncts of living-room or porch. They should be hung firmly on small galvanized chains or wire stout enough to support twice the weight of the plant (to allow for the weight of the water) and hooked into a material strong enough to sustain the weight of the filled basket; not, for example, into a plaster ceiling which is almost sure to crack. Select a hook with a decided "s" termination to prevent the chain from slipping off.

Hanging baskets are apt to be a nuisance when it comes to watering them, for they dry out quickly and need considerable care. The "Illinois" hanging basket does away with the usual splashing and spilling of water. Built on the same principle as the self-watering window box it holds moisture for days and neither drips nor leaks.

The window garden not only adds a very attractive decorative feature to the interior during the winter and fall months, but may be arranged to include a space for sowing seeds of flowers (and vegetables if so desired) to be transplanted out-of-doors as soon as it is safe to do so, thus securing at the earliest moment a most attractive display.

THE outside window box is an artistic feature, adding greatly to the exterior appearance of the house and is a source of interest, pleasure, and even education to those within. A win-

Mattie Edwards Hewitt, Photo.

WHERE WINTER HAS NO STING

This delightful bower contains all the requirements of a good window garden. The wide, deep recess; the tall glass openings admitting ample light both from above and from the sides; the movable curtains; the well cared for plants make a place where rest and comfort are combined with color and cheer. Note the detachable saucers under all the plant pots; also the display of crystal in varying shapes delicately scintillant in the sunlight of wintry days. Some very charming color effects may be gained by a similarly judicious use of the glass much featured in the shops nowadays in hues of amber, amethyst, turquoise, and claret

dow box unrelated to the structural aspect of the house is likely to be more troublesome and less interesting than if built into the outside wall below the window and of the same material, whether wood, brick, or concrete.

Once flowers are planted they require only water, light, and protection from extremes of temperature. Hardy species may be selected that will serve through the major part of the year. A well cared for window box carries a pleasing suggestion of pride and thrift.

The outside flower box is best placed well below the window. Drooping or trailing vines and sprays, or very short-stemmed flowers are most satisfactory. Tall flowers or high-growing foliage obstruct light and air from the room and are apt to be broken by the action of shutters. The best type of box for either inside or outside use is, in my opinion, that which provides for sub-irrigation as well as drainage. This method of watering prevents the surface of the soil from becoming hardened or baked as in the surface-watered box or pot, which fact alone saves the lives of many plants. A liberal supply of air to the roots is constantly maintained through sponges. The soil will always be found workable and loose, and the moisture evenly distributed.

A PORCH with pillars may be readily converted into a plant room for winter use simply by having sash or window frames made to fit between the pillars; these may be easily taken down in summer to restore the porch character and the sash stored in a convenient place until again wanted. Such an arrangement not only affords a good conservatory, but at the same time helps to keep the adjacent rooms warm during the winter. A small oil stove may be used to supply heat; but, better, a suitable supply run from the main heating plant. Balconies may be converted in a similar way. Windows or any ventilating sash should be readily accessible and easily worked, and the plants so arranged as not to obstruct access thereto.

In planning a sun room of any consequence there must be ample provision for sunlight; also facilities for watering, heating, and temperature control—this includes protection from cold drafts in winter and excessive heat in summer. Easy access to out-of-doors is requisite so that the plants may be handled without disturbing the rest of the house, and the sun room completely shut off when necessary for purposes of fumigation.

Whatever the size and shape of the structure, attach it to the south, east, or west side of the house, and let it project so as to have three sides exposed to the light and air. If of one story, light should also be admitted from the roof where feasible. The whole roof need not be of glass, even a third of the area in glass greatly increases its efficacy as a conservatory. If glass can be used only in the sides of the room, carry it as high as possible to admit a maximum of light from overhead, but such a place will not "grow" plants.

The matter of properly heating the plant room is one of the most difficult and important problems to be solved. The best way is to extend the main cellar under it, thus furnishing a permanent foundation; warmth under the floor; and making pipes for heating, draining and watering easy of introduction. A coil of ordinary heating pipes carried around the three sides of the room and kept close to the walls is much to be preferred to any system of radiators. This holds for either steam or hot water. The pipes take less room, distribute the heat more uniformly, and can be readily divided into pairs for the purpose of regulation. Arrange the valves so that one-third, two-thirds, or the total radiation may be used at will. The air should be cooler at night than in daylight, for any growth that is stimulated by heat without a corresponding amount of daylight is weak and undesirable.

Storm windows are important. They make an absolutely frostproof double wall of glass with consequent saving in fuel. The plants may grow close up to the glass, even touching it without chilling them; and the glass is always clear, not being covered with frost in even the coldest weather.

Ventilation from out-of-doors can be secured from transoms above. These are best hinged in the centre so that when open, the lower part of the window is outside and the upper is inside. By this arrangement cold air rushing in is deflected upward by the inclined surface of the window and is slowly diffused through the room and warmed before it reaches the plants below. A floor of concrete or tile, sloping toward a drain, preferably in the centre, proves most serviceable.

THE half-span or lean-to is an elaboration of the bay window conservatory and is built against an existing structure. For most purposes it should be located with the sloping roof facing south. A popular plan is to attach it to a garage where there is one. The heating system in one structure can then furnish the heat for both. It is an economical measure to so place a small greenhouse that heating pipes can be carried from near by buildings, thus eliminating the otherwise necessary workroom for housing the boiler. While a workroom is not indispensable for small houses, it is, however, a decided convenience, though potting, etc., can, of course, always be done on one of the benches.

If the garage is large enough so that part of it may be used as a separate workroom for the greenhouse, so much the better, but there should be no inside entrance between it and the garage, as the fumes of gasoline and burnt oil are destructive to the plants. It is also advisable to have the boiler cellar completely cut off from the garage, this does away with fire dangers from escaping gasoline.

The workroom is the business end of the larger greenhouse. It is here that the bins of soil are kept for repotting of plants. It affords a convenient plate for the potting bench and for packing flowers to be sent away, for seed and tool closets. It houses in its cellar coal and boiler. In some of the less simple workrooms, a second story furnishes living quarters for the gardener or his helpers, and on the lower floor an office for the gardener is included, a refrigerator for cut flowers, and other up-to-date features.

In greenhouse construction the wood frame has become a thing of the past, for the cost of its upkeep far outbalances its initial cheapness. The iron frame is being universally substituted, and is from every point of view more practical, with the added advantage of greater light inside with greater flexibility, making it possible for the modern greenhouse to assume more varied and interesting shape than its less amenable wooden predecessor. Foundation and flooring is usually of cement, a material also found serviceable for beds or benches; the unit type of concrete bench proving particularly convenient.

The setting up of a greenhouse or any sort of room for housing your plants involves, of course, some expenditure, but an expenditure perhaps more justifiable than many of the "non-essential" appurtenances of the average house. Plants and flowers are a constant source of interest and they give a fresh, live aspect to the dwelling that can be supplied in no other way.

THE GARDEN OF MRS. LINN WHITE, CHICAGO, ILL.

BEAUTY IN THE LITTLE GARDEN

EDITORS' NOTE:—The trend is nowadays distinctly toward group-life, as ever-swelling city populations and octopus-like suburban developments make manifest; with the influences and factors behind it all we, as gardeners, are not obliged to concern ourselves, but the fact itself demands attention. If wide spaces and the refreshment of green, growing things are being gradually crowded out of the lives of many of us, it is imperative that we set out deliberately and with seasoned plan to re-create, as far as may be, these essentials. Hence any and every association of men and women banded together for the furtherance of such work commands our friendship and coöperation.

I. ITS PLANNING TO FIT ITS LOCATION

LENA M. McCAULEY
Art Editor of the Chicago *Evening Post*

THE ideal of the far-sighted gardener is to bring country influence into the cities which, magnet-wise, are drawing the country folk to them and so robbing many of their birthright of association with the soil.

Certain landscape architects of national reputation, who shape great park systems and forest preserves, have submitted plans for community and school gardens, the saving grace of greenery wedged into congested sections, with the hope that it may to some extent assuage hunger for the soil and act as an antidote to artificial living. Others are recognizing the possibilities of planting the small vacant areas back and front of homes, where men, women, and children may find pleasant occupation and win the joys of country life among vegetables, flowers, birds, and butterflies that cheer the cultivator of even the smallest plot.

If the spirit of garden design keeps pace with the enthusiasm for cultivating the small area, many hopes brought to light at the exhibition of Landscape and Garden Design under the auspices of the Woman's National Farm and Garden Association at the Art Institute last spring, will be realized in the region about Chicago, at all events.

The Mid-west Branch of the Woman's National Farm and Garden Association is displaying considerable enterprise and energy under the direction of its president, Mrs. Russell Tyson. Although its headquarters are in Chicago, its membership is widely scattered through the Middle West, drawing from many groups that range from the traveled owners of large estates to the woman worker in the small garden, and the housewife on the remote farm. During the war its activities included the Libertyville Farm for training young women in actual farm work, the promotion of war gardens, the raising of vegetables for Infant Welfare, as well as floriculture in the Garden Clubs. A story of the women who went to the horticultural schools at the Universities of Wisconsin and Illinois for the specific purpose of carrying on the work of these universities in developing new species of flowering plants would make interesting reading.

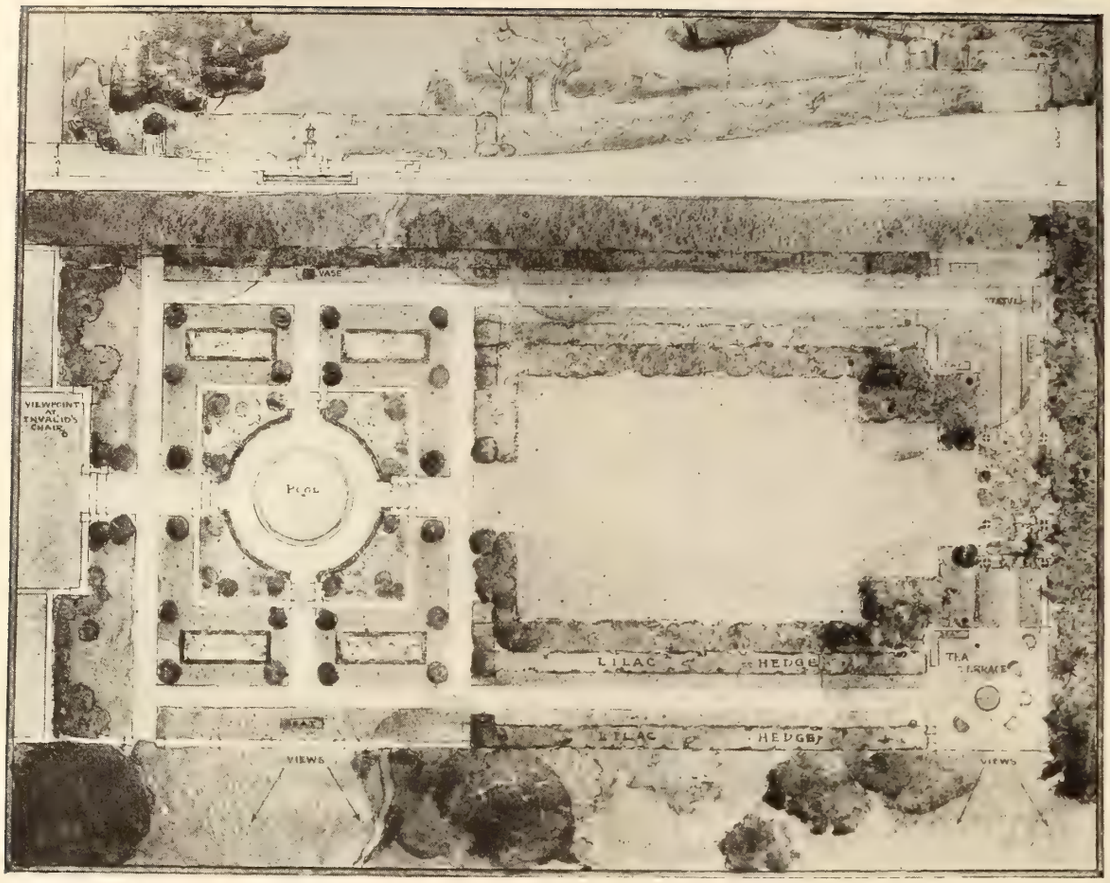
HOWEVER, the city membership held the true vision of its opportunities—namely the development of the small home plot of which there are tens of thousands within the Chicago limits. So a competition was announced and the students of the University Schools of Landscape Architecture invited to submit plans for two types of small garden—a garden planned for the pleasure and use of an invalid, and a simpler one for the average householder.

The designs were exhibited at the Art Institute of Chicago in happy combination with the annual display of the Chicago Society of Architects who brought drawings of homes and home grounds and some models which had relationship with the aims of the Farm and Garden Association. As a result two galleries were filled with garden plans supplemented by quite an assemblage of garden statuary, fountains, sun-dials, and bird pools, staged among shrubbery and blossoming plants.

The universities of Iowa, Minnesota, Illinois, Evanston, and Chicago; the Harvard School of Architecture; and enthusiastic draftsmen from Takoma Park, D. C.; from Boston, and from Leominster, Mass., were entered. Despite the necessarily limiting requirements of the competition, delightful originality was shown in many of the designs.

THE requirements of the first problem, the garden for an invalid, were as follows: the formal treatment of a rectangular enclosure 75 ft. east and west by 150 ft. north and south; at the centre of the north end a porch 80 ft. long projecting 5 ft. into the garden on which the invalid owner may spend his summers; ground sloping slightly downward from the porch for about 50 ft. to a tiny brook, then rising until at the south end it is 12 ft. above the brook; a heavy evergreen copse to skirt the garden on the south; on the west a view extending to the open valley and the sunset.

The judges based their awards on: 1. simplicity of plan; 2. treatment of varying levels; 3. design and proportion of enclosing wall or hedge; 4. garden features; 5. plantation. In addition to the plan (of course drawn to scale, $\frac{1}{8}$ in. to 1 ft.) a perspective of the garden as seen from the invalid's chair was to be rendered in colors. The first prize ($100), given by Mrs. Edward L. Ryerson, was won by Hale Walker of Harvard University School of Landscape Architecture and the second ($50), given by Mrs. J. Ogden Armour, by Henrietta Marquis Pope of Boston; to Francis Nearing of Boston was awarded a third prize given by



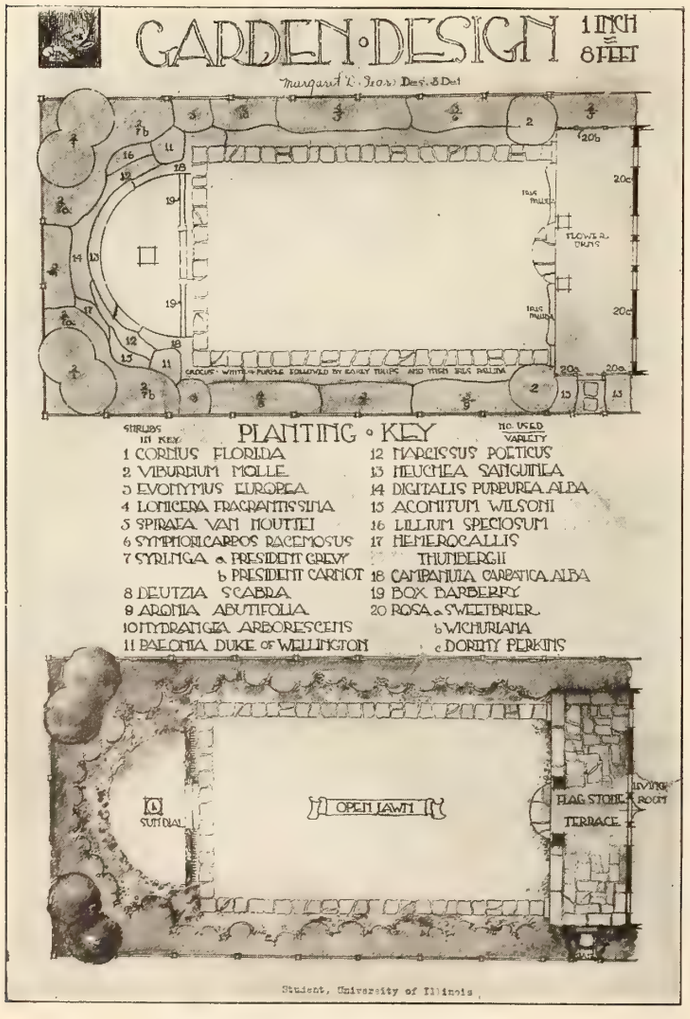
GARDEN FOR AN INVALID

Designed by Hale Walker, Harvard University School of Landscape Architecture; awarded First Prize. Ease of moving about a wheel-chair a determining factor in plan of paths and treatment of levels

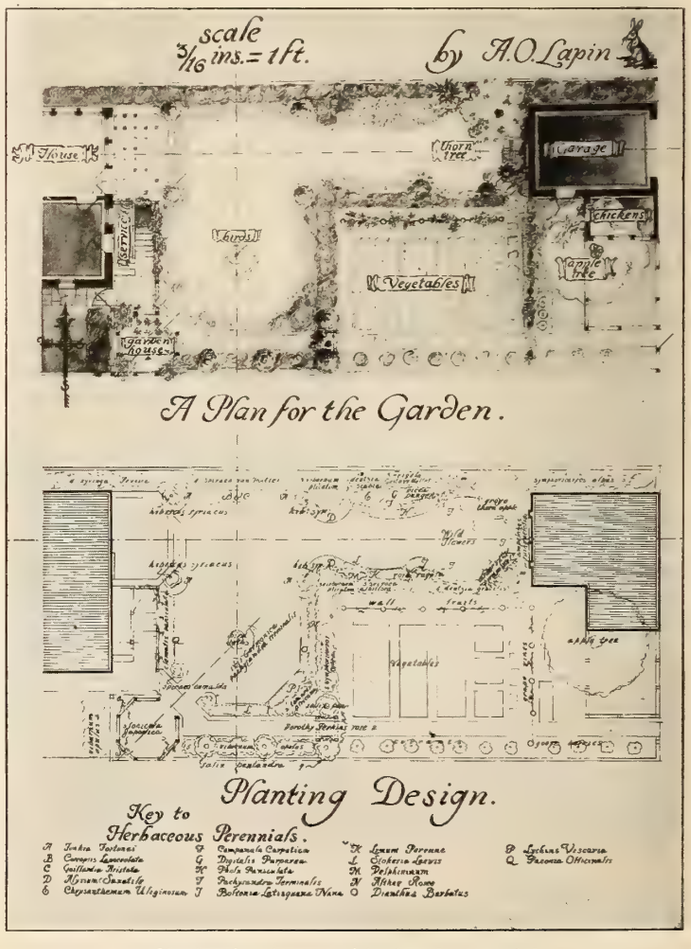
Mrs. Keith Spalding, and Honorable Mention was accorded to Elizabeth L. Strang of Leominster, Mass., and to Elizabeth Pattee of Boston.

THE second problem, that of the small city garden, was worked out by twenty-two competitors with such successful results that two first prizes of $50 each were awarded; the Garden Club of Evanston awarding one to A. O. Lapin of Evanston, and Mrs. Keith Spalding's award going to Margaret D. Sears, a student in the University of Illinois School of Landscape Architecture. The design of Robert Wheelright of Philadel-

Photographs by Frederick O. Blemm, Chicago Art Institute



Prize plan for small city garden by Margaret D. Sears, University of Illinois



Sharing first honors with plan shown at left; designed by A. O. Lapin, of Evanston

phia and that of George L. Nason of St. Paul, Minn., were accorded Honorable Mention and $10 each. As, with one exception, all the entries for small garden designs came from the Middle Western States, it looks as if this type of gardening has a rosy future ahead in that section of the country.

The sculpture added much to the beauty of the exhibition as a whole. Edith Baretto Parsons* of New York, Albin Polasek of the Art Institute, and a band of local sculptors contributed to the spirit of the occasion.

A graceful, symbolic figure by Josephine Kern and a sun-dial of rather unusual character by Ida McClelland Stout each carried off a $50 prize given by Mrs. Edward L. Ryerson whose own beautiful "Havenwood" gardens (described and pictured on pages 187, 188, 189 of THE GARDEN MAGAZINE for December, 1921) harbor some fine pieces of statuary.

QUITE apart from the undoubted benefit to gardening activities in general and the educational aspect of such an exhibition with its opportunity to establish friendly contact between the public and the trained group of men and women ready to serve them in matters horticultural, the exhibition brought to light all sorts of artistic gardens throughout the city. In fact a book could be written of the model little gardens that suddenly came to surprise their own neighbors.

PRIZE-WINNING DESIGN FOR SUN DIAL

Characterized by dignity and with an aspect of reassuring permanence, this piece of sculpture by Ida McClelland Stout received Mrs. Ryerson's award

Perhaps it may prove worth while to linger a moment in that of Mrs. Linn White which would certainly inspire one to go and do if not exactly likewise, at least similarly. The width of a city lot, it has a lawn enclosed by shrubbery near the house, a terrace beyond, a small pool three-fourths the distance back, the dividing line being a succession of perennials beginning with Daffodils which make way for Iris, Delphinium, and Madonna Lilies in turn. The procession of blossoming perennials hedges the stage of an out-of-door playhouse, with its retiring rooms for the actors in the shrubbery enclosing the grassed stage—an incentive for much happy and healthy diversion in the open air.

There were other gardens, too, full of varying suggestion, such as gardens featuring shrubs—Forsythia followed by Plum, Lilac, Bridal-wreath, and later the Mockorange; Roses, Persian Yellow, and others in pink, and white, skilfully bordering the strip of lawn. Pleasant color schemes for the small plot were presented worked out with perennials as their basis—the bulbs of April giving way to the Oriental Poppies, Garden Heliotrope, tiny Buttercups, and Pyrethrums of late May, with a fine arrangement of Iris set against the greens of plants that flower later.

Peonies do not like smoke and consequently, the city Peony garden is rare. Annuals thrive better in the Chicago region, a reason why one of the most effective types of little city garden is that laid out in formal lines to support the arrangements of Petunias, pink and white; borders of Candytuft and Sweet Alyssum; and the radiance of Centaureas, Calendulas, Nasturtiums, Verbenas, and the long-enduring Zinnias and Marigolds that lead to the Asters of autumn.

With the success of the Woman's National Farm and Garden Mid-west show of small garden plans vividly in mind, the lover of gardens feels justified in advising towns and villages elsewhere to go and do likewise and to encourage in every way possible this forward movement for more and better planting, particularly in the congested districts where it is so much needed.

ANOTHER PRIZE-WINNER

This lithe and freely-poised figure for garden use is the work of Josephine Kern and carried off a prize given by Mr. Ryerson

*On page 191 of the recent December issue of THE GARDEN MAGAZINE will be found one of the gleeful figures created by Mrs. Parsons which so delight gardeners everywhere.

II. ITS PLANTING FOR CONTINUOUS BLOOM

A Case of "Carrying Coals to Newcastle" when the Needs of an English Garden Owner Stretched Across the Ocean for Practical Aid

THE owner living in London, Eng., had very definite ideas—she wanted a sunken garden, a summer-house, a pergola, and a herbaceous border; rather an ambitious lay-out for a tiny space. She found in Miss Lilian C. Alderson of Greenwich, Conn., U. S. A., a garden designer able to visualize her wants and to put on paper the plan that was successfully carried into effect in a little plot in the heart of London—33 Maresfield Gardens. The place measured only 66 ft. long by 33 ft. wide, yet it lent itself to effective treatment by the employment of different levels. Accompanying is the plan as submitted in August, 1920; and a photograph of the garden as it actually was in July, 1921, is the "proof of the pudding." The details and suggested modifications for the benefit of GARDEN MAGAZINE readers are supplied by Miss Alderson.

The excavation for the sunken garden involved much time and labor and consequent expense, but the result accomplished fully justifies the effort and initial outlay. The sunken garden reveals a peculiar intimate charm—the soft tones of the gray stones make a foil for the brightly colored annuals, the pool reflects the trees and shrubs that surround the garden and the fleeting moods of sun and cloud as they chase one another across the sky.

The flagged walk is dry in all weathers, and the steps sunk in the wall break the monotony of the tiny garden and cheat the eye as to actual distance.

The spring planting of yellow Tulips with blue Forget-me-not underbedding is followed by the warmer tints of pink Geranium and blue Ageratum contrasted with mauve Heliotrope and white Alyssum, and all against a framework of flowering shrubs.

The combination of Delphinium belladonna with Madonna Lilies is one that always pleases although not uncommon, but the clumps of the feathery Spiraea Aruncus at either end add a touch of originality to the scheme of planting.

In the further half of the garden the three-foot shrub border widens out into a herbaceous border six feet wide on either side. Here the daintier perennials find a place. First the lovely biennials, Foxglove and Canterbury-bell, flower close on the heels of Iris Germanica and the pink Pyrethrum, followed soon by the early white Phlox Miss Lingard, these in turn replaced by pink Phlox and blue Veronica.

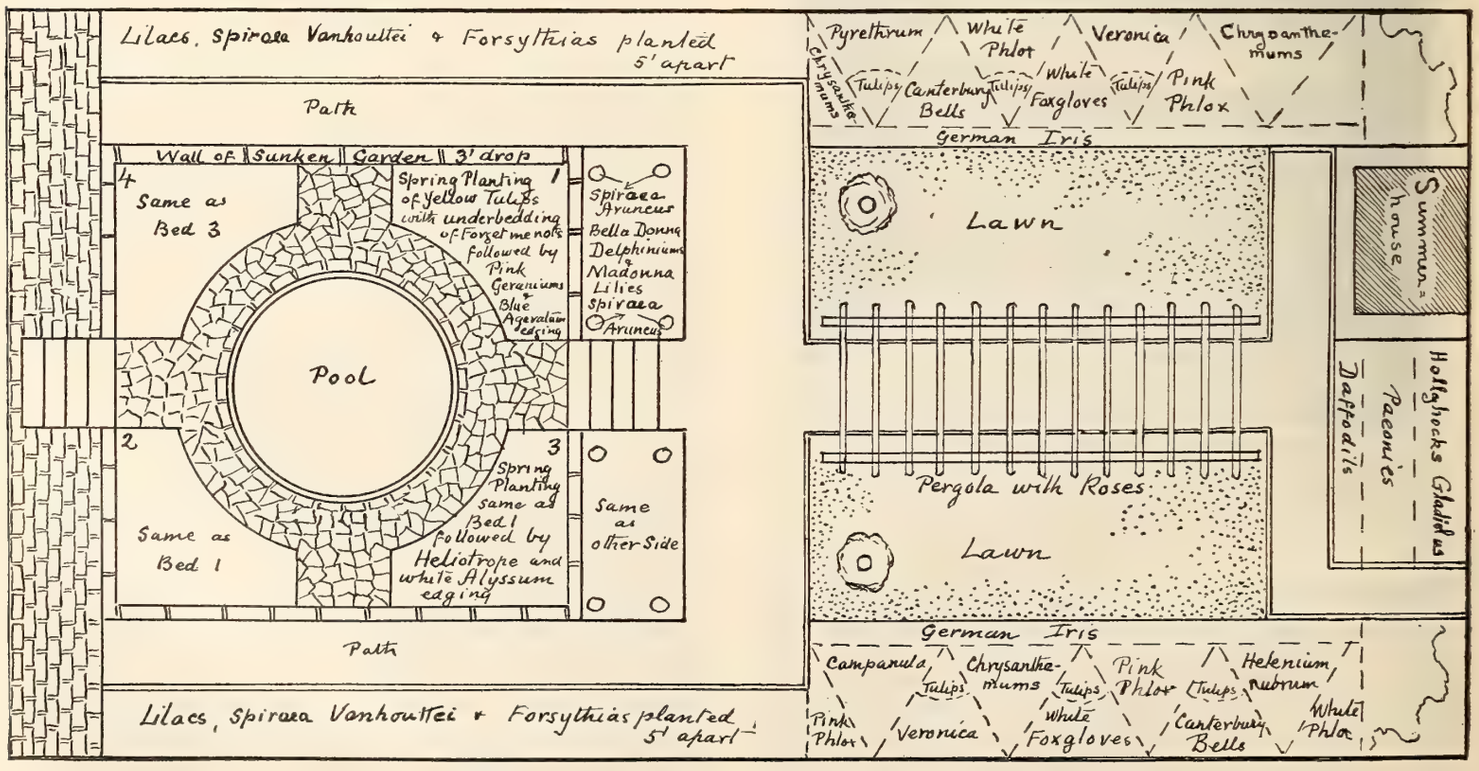
Behind the Daffodils and Peonies rise Hollyhocks and Gladiolus to enliven the summer hours with their bright variety of color, and in the autumn the Chrysanthemums are looked to for cheer.

The pergola, small as it is, adds length and dignity to the garden and leads appropriately to the summer-house, hidden in a leafy corner. Here in this secluded spot one can be alone in the very midst of a big city, surrounded by bulbs and fragile spring flowers and one may even, as summer comes, look into the heart of a Rose.

MANY of us could have such a garden had we the vision and the perseverance to make that vision live. But our city gardens must be differently planned from the London garden, for we have to depend on early and late bloom and forget midsummer altogether.

The joy of watching the bulbs rise up from amongst the spring bedding would alone make such a garden worth the having, but even in autumn we may still find and enjoy considerable color in our backyard garden.

The sunken garden nearest the house may be treated as it is in England with Tulips planted in the autumn, and the underbedding of Forget-me-nots put out in spring, as soon as the bulbs have made a good start. Chrysolora is one of the earliest and best of the single early Tulips, of a rich, pure yellow. An



AN INGENIOUS SOLUTION OF THE SUBURBAN GARDEN PROBLEM

This plan of the garden shown in the photograph on the opposite page, makes a good deal out of a little space, and carries several appealing features. Though formally balanced there is ample freedom for individual fancy and the materials can be changed in a variety of ways. (Scale 8 ft. to 1 in.)

ONE YEAR FROM THE PLAN

This American-made London garden is ingeniously designed. The feeling of depth and space is in no little degree due to the sunken foreground and the arbor-covered central walk leading to the distance

edging of low growing Box-barberry gives these beds a cheerful appearance in autumn and formal tubs of Box or clipped Privet may be set at the intersecting angles during the short period of occupancy in the autumn months. The borders just behind the sunken garden look best banked in with a double row of Evergreens interspersed with Japanese Barberry (Berberis Thunbergii).

Iris, Tulips, Vines, and Annuals

ALTERNATE groups of Iris germanica and Darwin Tulips fit nicely in front of the shrub border, the Darwins to be followed by Zinnias and Marigolds sown in the bare spaces about July 1st for autumn flowering. A most effective display is gained by using six groups of each on either side: Iris pallida dalmatica, lavender; Iris Queen of the May, rose; Iris Lorelei, light yellow and blue; Iris Neibelungen, fawn and violet; Iris Mme. Chereau, white blue-veined; Iris Honorabile, gold-brown. Darwin Tulips: Clara Butt, salmon-pink; Baronne de la Tonnaye, deep rose pink; Ronald Gunn, mauve; Pride of Haarlem, rose suffused scarlet; Princess Juliana, orange-scarlet suffused salmon; Phillippe de Commines, purple-maroon.

Unfortunately for the makers of city gardens, Roses refuse to bloom before the summer exodus begins, but there are many hardy climbers with good foliage with which to clothe the pergola, such as Dutchman's Pipe (Aristolochia Sipho), leaves like Morning-glory; Actinidia arguta, rapid growing; Trumpet Creeper (Bignonia radicans), good foliage; Clematis paniculata, flowers starry-white in late summer; Honeysuckle; Matrimony Vine with scarlet berries; Wisteria chinensis, purple flowers early before the leaves come out. Some annuals to cover which have proved their merit are Cobaea scandens, bell-shaped purple flowers in autumn; various ornamental Gourds; Nasturtiums; Morning-glory.

And to gladden our hearts in winter we have the tiny scarlet lanterns of the Barberry, swinging against the deep blue-green of Juniper and Spruce.

Evergreens and Shrubs for the Garden

IN PLANTING the three-foot wide border on either side, the suggestions here given may safely be followed. Small evergreens with good foliage are Juniperus virginiana glauca, sabina, Pfitzeriana; Retinispora squarrosa; alternate these with shrubs of reddish-bronze foliage such as Pieris floribunda, Mahonia japonica, Cotoneaster horizontalis, Azalea amoena. California Privet (Ligustrum ovalifolium) and Regel's Privet (Ligustrum Regelianum) may also be used as fillers.

In front of the evergreens and shrubs, a double row of Victoria or Emperor Daffodils adds a bright touch of yellow in early spring, while their thick green leaves help cover the edges before the background fills out. Perennials—with the exception of Hardy Chrysanthemums in variety—must, of necessity, be banished from the six-foot border in the upper garden, and their places filled by early flowering shrubs with good foliage.

Spiræa Thunbergii is an excellent early white-flowering shrub for this purpose and Forsythia Fortunei a good earliest yellow; Spiraea Vanhouttei, with its drooping habit and showers of white flowers, may well be used; also Symphoricarpos racemosus for its small pink flowers followed by white berries in autumn.

THE HOUSE THAT WAS BUILT FOR A GARDEN

ARTHUR W. COLTON

EDITORIAL FOREWORD

HOME BUILDING is no longer merely a matter of mortar and shingles; nowadays we build with living flowers and trees as well—witness the steadily growing group of landscape architects.

Past the pioneer period where shelter was the sole consideration, and having mercifully survived the terrible years when architecture lost its early innocence and awakened to a crude and blatant self-consciousness that struggled for expression in "ginger-bread" ornament and innumerable angles, we have emerged into more gracious days with the leisure and the learning to look about and determine what sort of homes we really want, and why.

Nowadays a house is not arbitrarily set down anywhere on a plot of land and then followed by a query as to where the garden shall go. Quite the contrary—the particular piece of ground in question is first carefully studied.

For it is the land, its character and spirit, that determines what the house shall be. When this fundamental principle is disregarded we at once sense the "something wrong." Grievous to see are great residences perched bleakly in unsuitable environment with no appearance of belonging, with a futile air of having been temporarily set down upon the earth rather than of being there comfortably at ease and at one with it.

A dwelling may be made or marred by its approach, by the massing of woodland or shrubbery on this side or that, by the disposition of flower-beds and borders, all of which must, for harmony of finished effect, be included in the original plan.

Because garden and house are so inevitably linked, so essentially interdependent, we believe that gardeners everywhere will find much to interest and inspire in this series of articles, especially prepared for us by Mr. Colton, which presents some happy solutions achieved by Americans of skill and imagination East and West. (The first article of the series may be found in THE GARDEN MAGAZINE for December, 1921, on pages 187, 188, 189.)

II. CHARLES A. PLATT'S ADAPTATION OF ITALIAN STYLE TO AMERICAN SPIRIT

IT IS, of course, a different matter to see gardens with the eye of an architect and to see gardens with the eye of a lover of leaves and flowers. The Italian of the Renaissance was an artist, but not a nature lover, whereas Americans have an instinctive love of nature more commonly than an instinctive love of art.

We inherit a tradition of English taste for English landscape gardening, which is informal; we come later to see that there was reason and beauty in the old Italian's architectural gardening; and behind these, behind us all, lies the great fact of our own countryside, which is neither English nor Italian, but like neither and like both. We are immigrant peoples importing divergent cultures into a new continent. This northeastern part of the country was not long ago buried in forest, mainly deciduous, and it is still, relatively, a wooded land. Our tastes are sprung from these elements, and whatever beauty we may succeed in creating about us must be based on these tastes.

Personally, I was, thirty years ago, an apparently incurable romanticist, with the same pronounced dislike for Versailles as for Pope and Boileau, and possessed of the feeling that "the return to nature" was simply the escape from a dull prison into beauty and reality. But in the course of those years the feeling has lost some of its edge. It has had to listen to other feelings; to an unexpected and extraordinary pleasure, for instance, experienced in the stately avenues of St. Cloud, to a vague but growing and impatient discontent with the whole "native" school of landscape. When one has got so far as invariably to emerge from Central Park with the feeling that the fear of a straight line is the beginning of nonsense, he is no longer an incurable romanticist.

Mr. Platt has seen all these things earlier and more clearly than most of us, and has formed delicate solutions for problems that we were beginning to be obscurely aware of. A garden is, among other things, an intermediary. It has relations to the house on the one side, and on the other to the country around it. It is, in that sense, the centre of an aesthetic complex. It is dedicated to happiness, or at least to content, and the growth of garden making in this country is the entry upon a long vista of more beautiful, more fragrant living for myriads of people in generations to come.

THAT Renaissance architects had planned the gardens of country palaces not only for show but for comfort is a discovery made and recorded by Mr. Charles A. Platt in his book on Italian gardens. "Discovery" in this sense does not mean that it never had been noticed before. It may have been, or may not. Columbus discovered America, whatever Eric the Norseman may have done. It is a relative question of realizing a fact and bringing it home to use.

With trained and observant eyes Mr. Platt noted in this or that garden the utility of design rather than the monumental grandeur—"the shrewdness with which the architect had taken advantage of every peculiarity to give the princely dweller on some great hillside not only the things he wanted for show but the things he needed for comfort—the intimate character implying quiet hours in the shade, easy access to the house, convenient walks, and all the resources requisite to a happy human life." He saw that the garden of the Villa Lante, for example, "though merely as a spectacle, one of the most entrancing in all Italy," is yet made for domesticity; and, though framed on stately lines, is a home, set amid flowers and sunshine, with fountains sparkling and murmuring, and pavilions between its basin and grove of towering Oaks.

It was a discovery that has wide analogies. Old architectures, like historical men and times, become spectacles to be looked at —monumental, romantic, strange and dim with time—which in their day were no such matter. The "princely dweller on some great hillside" for all his stately marbles, cared more profoundly for happiness than splendor, cared in his own way for comfort and convenience, and to him cool shade and running water and children playing among the flowers were pleasant, as to us. He liked the quiet talk of friends by sunset and twilight in the garden. We understand the men of the past better, and the records they left behind them, if we do not forget that normally every one of them every day sat down to his meals, and every night took off his clothes and went to bed.

BRINGING back from Italy, some thirty years ago, the idea that a Renaissance villa was something to be lived in as well as something to be looked at, Mr. Platt brought with it the problem of how to adjust the old Italian ideal, the villa and its gardens, to the modern American home.

At that time (the early 90's) the building of great country houses in large numbers, was just beginning. Such houses had not been common except at places like Newport; or in the neighborhood of a few large cities; or here and there in the South, the relics of a day that was dead. But wealthy people everywhere were beginning to look to the country for homes instead of only

RESIDENCE OF I. T. STARR AT LAVEROCK, PA.

Of all the ways of making a garden perhaps none is more friendly than this, where flowers fairly peep into the windows and run gaily alongside the early morning stroller down the pleasant, sunny path. Here house and garden are ideally one, expressive of a rare and inviting harmony

WHERE OLD THEMES FURNISH INSPIRATION FOR PRESENT-DAY DESIGN

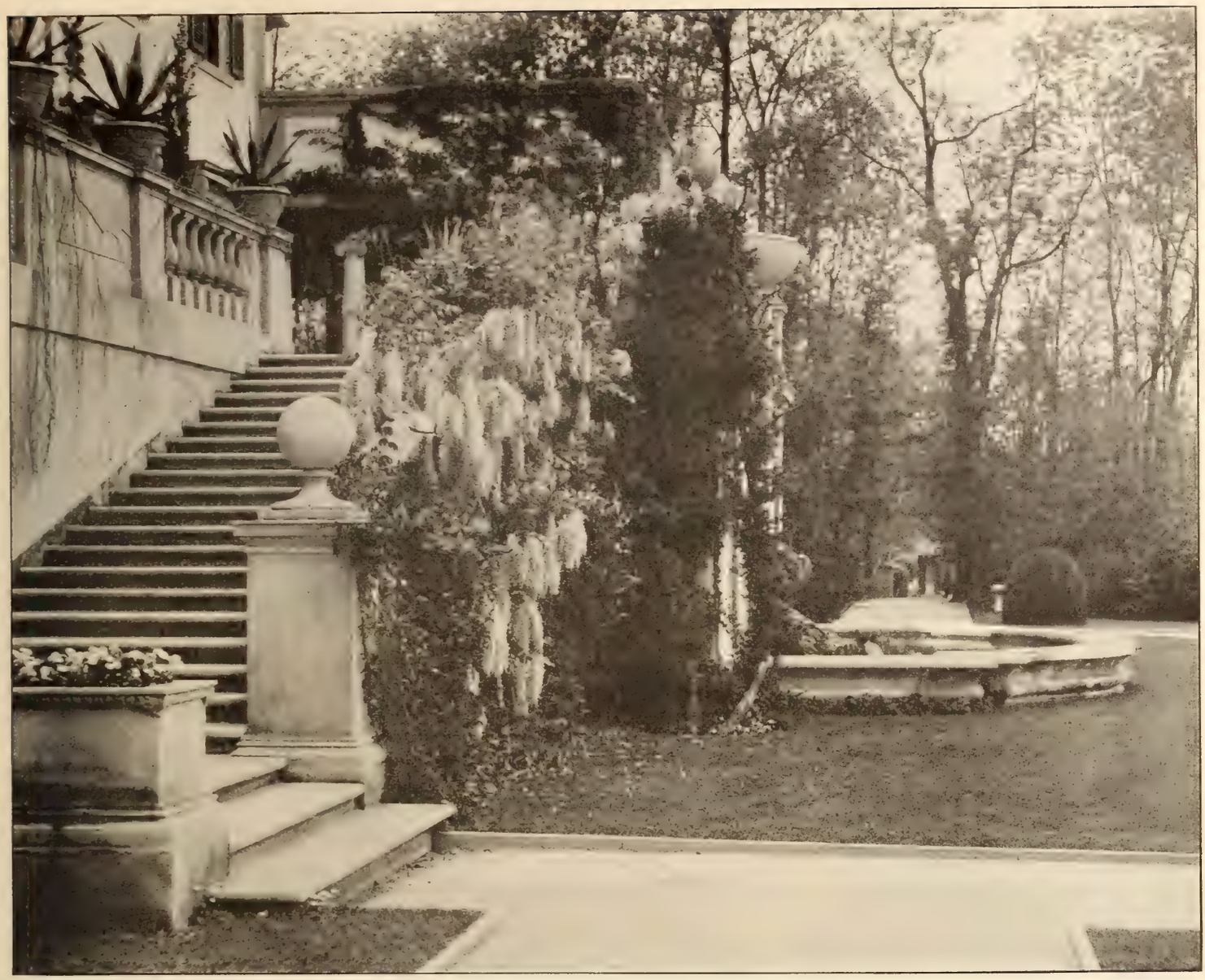
Reminiscent of the classic gardens of Europe in its architectural restraint, yet unmistakably both American and modern in spirit, this garden at "Timberline," Bryn Mawr, is one of Mr. Charles A. Platt's distinctly successful adaptations, or perhaps more truly interpretations of Italian ideals in terms applicable to present-day living

for holiday resorts. The last twenty-five years has been a great era of country house building.

In a goodly proportion of these houses the influence of the Italian villa has been plain enough. In the houses designed by Mr. Platt the influence is quite apparent in some, and rather remote in others; less dominant on the whole than with many other and later architects. His temperament and taste are too American, too much of New England, to be very Italian. There is in his work a certain fine austerity or reserve—call it a sense of fitness in relation to American landscape—which transmutes Italian into American values.

For whether one likes it or does not, there is a moulding and qualifying something in our American environment, climate, and countryside; and into its likeness we ourselves in some sense grow. Returning from Europe to "these United States"—or at any rate to the northeastern quarter of them—the traveler notices that the air seems keener and clearer, the sky paler, and the clouds more delicate. One is in a mood to prophesy literature gorgeous, ornate, sumptuous, sensuous or passionate, or profoundly melancholy. It is a country where men would "think clear" before they "feel deep." Hence probably it would begin with good taste rather than with chaotic power; it would be a finely civilized country before it sounded the deep places of humanity and attained those darker moods, those more subtle and profound emotions, that underlie the great creative ages of the Old World. One goes on to notice that where the population is native for many generations, the men seem more lean and sinewy, less solid and robust, the women more slender, the complexion of both less florid and perhaps a shade darker, than the men and women of those northern European lands from which their ancestors came.

IT IS a country which has had so far only one notable era of creative art, the literature of New England and its neighbors in the second and third quarters of the last century, and this literature was for the most part more intellectually than temperamentally striking. It gave out more light than heat. It never blazed red, was never grim, or sardonic, or tragic. It was



WHERE EVERYTHING SPARKLES WITH AIRY BRILLIANCY

Even through so unimaginative a medium as the camera a delightful sense of color makes its way—it is quite easy to visualize the lucent delicacy of Wisteria bloom and the deep, shining green of the creepers behind. The light, clear beauty which characterizes our northeastern climate and landscape is here epitomized. "Timberline," Bryn Mawr; Charles A. Platt, architect

original, imaginative, lucid. Its feeling was high and fine, rather than deep and rich. It puzzled the European critic—why the vast shaggy continent should produce a literature notable not for crude power, but for refinement and good taste. It was not the product of a continent, however, but mainly of certain cultured groups; and somehow, one feels that this pale blue sky, and thin-soiled countryside—hilly, but not mountainous; pleasant, often exquisitely beautiful, but seldom grand or probably thrilling—must have also had something to do with those characteristics.

If an Italian inspiration in respect to gardens and dwellings is brought here and put through the alembic of American conditions and a New England temperament, would not the result be something like those old-world inspirations in the hands of Irving and Longfellow and Lowell?

It is interesting to note that the Italian suggestion seems stronger in Mr. Platt's gardens than in his houses. The Italian garden is formal and structural. It is, so to speak, an extension and continuation of the house; and the structural garden, in intimate connection with the American country home, was, in some degree, really a new thing. Mr. Platt was a pioneer. It was the peculiar good fortune of the movement that it had for a leader one who "saw his problem steadily and saw it whole"; who was subtle but restrained, creative but controlled, sincere but of unvariable good taste; who always sought fitness and right relation, and achieved distinction of result through perfection of style. It was fortunate that the Italian ideal was brought to us, not by an impetuous fanatic for the beauty of another age and time, but by one who was also a lover of "nature's clean and fragrant paths"; who had his own vision of beauty and followed it; who never tied himself to a formula, and could use the edge of a forest or the wandering sweetness of an old fashioned flower-garden—when it suited his purpose—as easily as a clipped hedge or marble basin.

A third article, shortly to follow, will deal with the relatively small house and garden as exemplified in some of the work of Charles Barton Keene

THE BEAUTY OF THE WELL-MADE LAWN

It always pays from every point of view to make a good foundation no matter what one is planning to build, and a proper lawn area enhances the effectiveness of any subsequent planting

MAKING A LAWN THAT WILL LAST

JOHN COLLINS CAMPBELL

Landscape Architect

STAGE I.—SOIL PREPARATION, GRADING, AND FERTILIZING

EDITORS' NOTE:—Another article, Stage II., to follow shortly, will carry the discussion into the seeding, mixtures and later maintenance of the lawn

BECAUSE a good lawn is the fundamental feature of the home grounds, there is no phase of outside adornment that requires more thorough preparation and diligent care *in the beginning* than does a perfect lawn.

Existing conditions must be considered in every case as no one solution of the grading problem will fit every case. The character of the soil is perhaps our first important consideration concerning which the following questions must be answered:

Does it contain a moisture supply at all times?

Does it take care of excess moisture in wet weather which is so necessary for the establishment of a good lawn?

Does it contain sufficient organic matter, a very important character which enables the soil to retain its moisture?

Does it supply good drainage, for good drainage removes harmful material in the drainage waters which are detrimental to a good lawn?

In a general way it may be stated that heavy soil should be lightened by a liberal application of sand, and light soil given a body by applying a clay-loam or the equivalent.

WHERE the existing sod on the area to be graded is firm and has a good stand of grass, it should be carefully stripped and stacked in piles, each alternate layer being inverted so as to bring the grass surfaces together, which method will keep the turf fresh and in good order to be relaid. If the existing sod is rather poor, it will be better to plow it under as a fertilizer to the new lawn, thus giving the prepared soil a fibrous quality.

When the area to be graded is on virgin soil, there will be found, in most cases, all kinds of roots, weeds, brush, and other undesirable material the greater part of which should be removed before any attempt to turn the soil is made. This done, the area to be graded is definitely staked out. It is important not to attempt a greater area than can be maintained in first-class condition as the matter of up-keep of a perfect lawn is very great, and it is far better to increase the area in shrubs and trees than to have a too large and uncared for, untidy lawn.

Where a considerable amount of fill is to take place, remove the top-soil to its full depth, placing it in soil banks near the work or spread it on the areas already sub-graded. At this handling all sticks and stones are to be carefully removed and care taken not to mix the topsoil with the subsoil.

Where there is to be a large amount of fill, opportunity is offered for the disposal of any accumulated rubbish. Any such that will not decay may be placed in the fill by layering with the heavy material on the bottom. A safe rule to follow is not to allow rubbish to be placed in the last three feet of fill. Any rocks encountered in the area should be removed at least ten inches below the finished grade and where they exist of a considerable size and are difficult to remove they may be buried by digging a hole at one side deep enough to contain both rock and the required amount of fill over it.

When the existing soil is

AMOUNTS OF FERTILIZER FOR AN AREA OF ABOUT ONE-EIGHTH ACRE (5440 SQ. FT.):

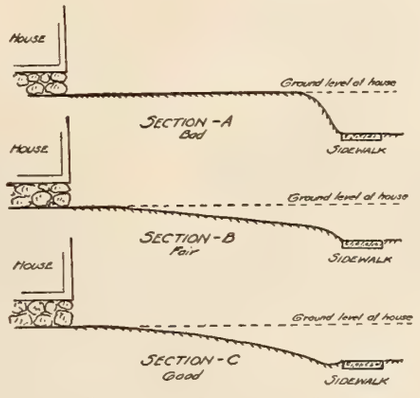
Well rotted manure (stable)	5 to 7 loads
Lime	125 lbs.
Ground Bone (fine)	100 "
High grade fertilizer (3% Nitrogen, 6 to 8% Phosphoric Acid, 8% Potash)	50 "

heavy, it should be under-drained from three to five feet deep with tile drains approximately from ten to thirty feet apart according to the nature of the drainage. The heavier and more impervious the soil, the more tile must be used.

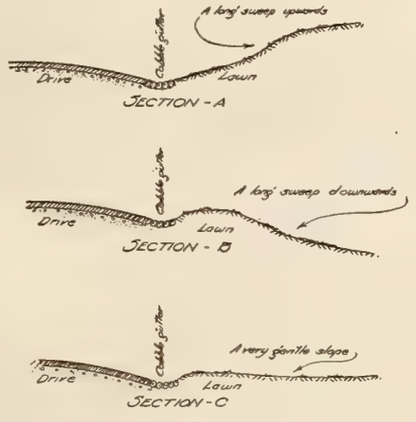
PROPER grading is the one detail of lawn construction that must be undertaken with deliberation and a determination for thoroughness, since its correct handling goes so very far in determining the appearance of the place. The making of a surface of a lawn that is unobtrusive, easy to maintain, free from bumps and hollows is no easy task; but, although it requires some skill, it can be accomplished by the layman with home-made devices.

If the lawn area is large enough, it is first plowed and cross-plowed and disc-harrowed repeatedly; but on areas that are too small or where such working is otherwise impracticable (especially around the roots of trees, where the utmost care is to be exercised to prevent injury) hand-trenching and raking will take the place of all plowing and harrowing. After the soil has been plowed and harrowed or otherwise adequately prepared, the surface should then be shaped by either the use of an old rim of a cart wheel or two pieces of 2 in. by 6 in. board, or the equivalent, placed one behind the other about 18 in. apart as shown in the accompanying sketch. As they are being dragged over the surface of the lawn, these devices will break down the high places and fill in the hollows and to a great extent break up the clods of earth with which they come in contact.

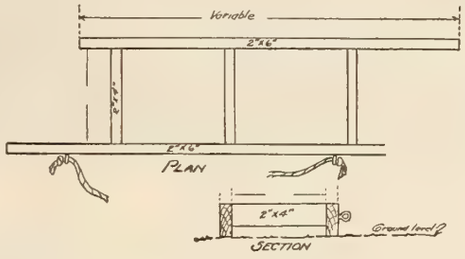
When the rough grading has been handled in this manner, the surface is ready to be raked by hand, going over it thoroughly in one direction at a time and placing the gathered rough material in convenient piles to be carried away later. The amount of raking will depend to a great extent upon the condition of the soil, but a good safe rule is to go over the surface at least three times or as often as needs be until the largest particles that remain are not more than $\frac{3}{4}$ in. in diameter. Such thorough preparation insures an even surface to receive the seed which is to be sown in such uniform manner as to insure success through a uniform stand of grass. The lawn should now be smoothed into proper shape ready to receive the seed.



SECTIONS OF GOOD AND BAD GRADING



TREATMENT OF GROUNDS SKIRTING DRIVES



HOME MADE WOODEN DRAG
Note:- Same results can be obtained by splitting a log in place of 2"x6"

IT MAY be stated as a general principle of grading that all surfaces immediately about the house should be as smooth, level, and well-kept as possible, and as the lawn recedes from the house the surface may become more broken and less smooth, merging gradually into the irregularities of the naturalistic surroundings of pasture, meadow, or woodland. The grounds skirting drives and walks should in most cases be level for a width of a few feet, beyond which they may slope up or down. If these slopes are less abrupt at their bases than at their tops they appear less harsh and are more easily kept up. A convex surface tends to give the effect of increased area, while a concave surface seemingly shortens the distance.

The ideal soil for a lawn is one moderately moist and containing a considerable amount of clay; a soil retentive of moisture but never becoming exceedingly wet; inclined to be heavy and compact rather than loose and sandy. The application of good organic manure, liming, and drainage are the most potent factors in promoting proper soil conditions.

To insure a good stand of grass that will endure dry spells and remain green throughout the summer, the topsoil or loam must be uniform to a depth of at least ten inches.

After the first plowing is the time to add any desired fertilizers, such as well-rotted, broken-up, barnyard manure and bone meal which should be spread evenly over the area and plowed or dug in immediately. After this scatter pulverized limestone on the areas and harrow or rake at once below the surface of the soil, being careful at the same time to secure a finely pulverized and smoothed surface which should then be rolled.

ON READING A SEED CATALOGUE

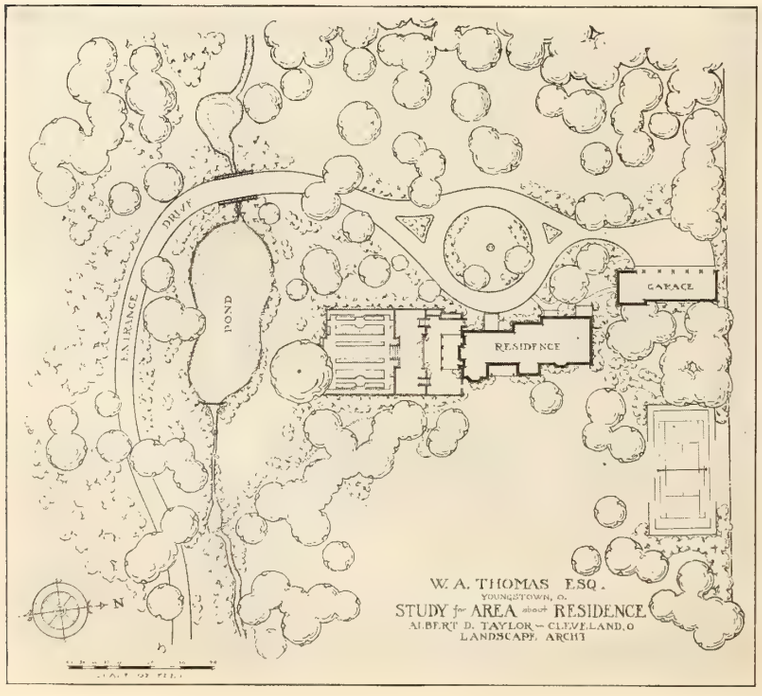
HILDA MORRIS

While yet I sit before my fire
Your pages lead through garden rows,
Into a land of bright desire,
Where ecstasy with dreaming grows.

No garden wrought of poesy
And flowery words that waft perfume
Can make a vision real to me
As do your promises of bloom.

Blown buds that long for me have lain
In memory's quiet close are here.
Upon your pictured page again
Glow roses of a bygone year.

Oh words and wonder tell but half
The beauty you invoke for me—
You are my garden's epitaph,
You are my garden's prophecy!



WATER IN THE MID-WEST GARDEN

Home of Mr. and Mrs. W. A. Thomas Youngstown, Ohio

Designed and Developed by
Albert D. Taylor
Landscape Architect

HOW gratifying to one's sense of fitness, how much more fundamentally true is the use of water in its serene naturalness where allowed to fill and follow the hollows of the land unspoiled by affectations, than where it is artificially cramped. How much more beautiful such mirroring of the slowly shifting shadows and the happy sunshine on the peaceful surface of a little pond like this than restless squirting jets bespeaking artificiality, and wholly foreign to nature's own ways in the matter of water.

Margin and sloping bank offer all sorts of opportunity for the introduction of water-loving plants, and groupings of graceful grasses or shrubs. Ingenuity has done much in this particular instance, transforming an originally rather meaningless small stream into a landscape feature of value and charm.

WALKS AND TALKS AT BREEZE HILL—V

J. HORACE McFARLAND

Wherein is Reflective, Critical, Philosophical, and Friendly Comment about Plants and their Behavior, Inspired by Personal Experiences in a Garden Made for Pleasure

AS I was looking over a hedge of Climbing Roses that runs parallel to a traveled street, a man wheeling a baby-coach (it was Sunday afternoon, please!) stopped and spoke.

"Where will you plant the Dahlias this year?" he asked.

I told him I would need to put them back in the garden, not along the street where they did radiant duty the previous season.

"Oh, but you mustn't put them where I can't enjoy them as I pass by," he said. "They were wonderful last year. I never saw anything so beautiful."

When I told him he was entirely welcome to come in and see them, and to see the garden generally, whenever he wanted to, he replied that he certainly would do so, and thanking me, wheeled the baby away.

I have been thinking much of that man's anxiety about where I might plant my Dahlias in my garden. What concern is it of his? Isn't Breeze Hill my garden?

No, it isn't. It never has been. Incidentally, I have a deed for the land; I have made and tended the gardens and have seen that particular West Garden develop during the past dozen years from a rough shale grading into what it is. I have pulled out a million Shepherd's-purse and Button-weed; have piled on manure; grown Vetch to be turned under for humus; have seen the spade driven down a straight twelve inches into every foot of it. I have coddled the Pyruses (or Maluses—I forget which is the name-fashion for the Apple-Pear family to-day) in the southwest corner under the tall Locusts; I have stretched that Rose hedge that faced the street.

But I never made a single leaf to grow, a single flower to bloom, of my own power. Who am I, a mere passing tenant of a little section of God's lovely earth, to shut out by ownership any one from seeing what He does with the mysteries of soil and water and sunshine!

This little Eden is mine "to tend and to keep," but not to exclude others from. So I have welcomed the visitors who are part owners with me, and am glad to have them stop and enjoy the things that happen. Indeed, I enjoy with them, and I enjoy their enjoyment. There are no gates across the four Breeze Hill entrances.

Hardy Outdoor Chrysanthemums

MY memory tells me of many "'mums" or "frost flowers" in the dear old garden of my boyhood home. Little yellow, brown, red, white, and pink "buttons" they were, and they warmed the chill garden days of October. I have not succeeded in getting established at Breeze Hill any of these ruggedly hardy Chrysanthemums except a dull, dark red sort that stands anything. The successive purchases of many sorts, and even the getting of some from old gardens, have given us good flowers sometimes, but plants of only incidental hardiness. Two winters ago wiped out all but the red one I have mentioned and a yellow button sort that seldom colors before hard freezing. A few plants stored in my "dug-out" or deep coldframe kept stock, but I have not gotten back the abundance I like of these indispensable autumn flowers.

There is one sort of the so-called Early-flowering Hardy Chrysanthemum that has escaped the attention it deserves. Catalogues offer it with a simple and quite indefinite description, leading to the cynical reflection that the florist often avoids either noticing or checking up the accuracy of his descriptions.

This one different "'mum" is Normandie. It is of the informal Japanese type, opening into pink flowers of considerable size, which eventually fade toward écru and white, the fading being agreeable and long postponed, by reason of the endurance of the bloom. But the surprising thing about this Normandie is its earliness. I have had flowers open on August 25th, and the plants will do bloom business for more than six weeks. If "disbudded" the flowers will have considerable size, but not at all in the cabbage-head class that some folks admire.

There is a clear yellow "sport" of Normandie, but it isn't as generally good as the parent. Indeed, I don't know of a truly reliable and reasonably early yellow hardy "'mum." Lillian Doty is a daintily beautiful globular pink; and I had, until the bad winter wiped it out, a pleasing white sort called Queen of the Whites.

If I were a hybridizer of Chrysanthemums, I would certainly work with Normandie, hoping to carry its earliness, its endurance, its other good qualities, into a variety of colors. Our gardens need about a dozen hardy and reliable Chrysanthemums, utterly apart from the greenhouse monstrosities that never even suggest garden relations.

About Prinsepia sinensis

THE Forsythias are most useful spring-blooming shrubs, and they surely do shine out in the shrubbery border. Breeze Hill had a tremendous clump of F. viridissima, evidently the quarter-century's extension of one plant in the only good soil on the place when I was absorbed by it a dozen years ago. It made a noble show, and I was indeed sorry that decrepitude and soil exhaustion made its removal necessary four years ago. Then there came an Arnold Arboretum plant of the true F. intermedia, which set a new standard for profusion and beauty of bloom and compactness of plant. It has made me wonder why nurserymen will go on propagating less satisfactory forms that are no easier to grow, just as I wonder why the same uncommercial tradesmen keep on with Philadelphus coronarius only, when with no more effort they might grow and sell—at a higher price, probably—the lovely Mockorange Virginal to better pleased customers.

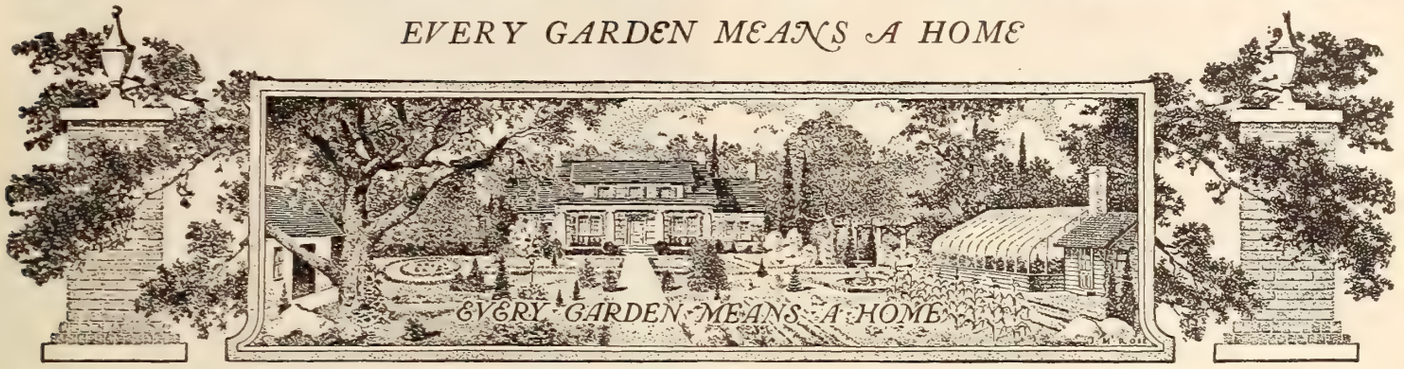
But this is not a Forsythia story. It is rather a word of another and earlier shrub, with unique qualities and attractions. Prinsepia sinensis is the first shrub to unfold its leaves in spring, and they mind not at all the late snows that sometimes hang on the graceful outcurves of the plant, which reaches barely to three feet in height. The flowers open as the leaves develop, and their soft golden loveliness is delightful. Not individually conspicuous, as are those of the Forsythia, the effect is rather that of a yellow mist or cloud—an effect of refinement and elegance.

This is another Chinese shrub, and we seemingly owe it to England, to which land it was brought from North China some years ago. My cherished plant came from the Arnold Arboretum. Where to get plants, I will be asked! I don't know! The nurserymen are yet blind to this lovely spring shrub, more's the pity!

Prinsepia uniflora is a sister plant, but without any attractions I have been able to discover as yet, while its thorns present some definite detractions. It may have possibilities as a low-growing hedge plant, and after it blooms—as it has not yet done—its white flowers may commend it.

AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME



ECSTATIC VS. STATIC GARDENING

BY AND large, most gardens would benefit by periodic changes in detail through the application of new ideas, new inspiration, new imagination. Although the underlying phenomenon in all gardening is continuous growth, a great many people leave all the growing to the plants, seeming to disregard the possibility of their own mental attitudes and conceptions becoming bigger, broader and freer. It is *so* easy for gardens—and gardeners, too—to sink into ruts of static existence, and become tediously conservative and "set in their ways"—and it is *so* hard to climb out.

We are considerably more animated indoors than out. One of the householder's keenest joys is the "doing over" of rooms. Possible combinations of new wall-paper, new woodwork trim, new styles of furniture, new hangings and upholstery, new pictures—these offer a field for most delightful and fruitful excursions. The choosing of the new materials is as alluring as a hunt for buried treasure. Each day of actual work is full of alternating anticipations and realizations. And, finally, there is the grateful reward of contemplating the finished result, the adventure of becoming accustomed to the new surroundings.

How often do we even so much as think of rearranging or "making over" even a corner of the garden? Yet the possibilities are no less varied, no less delightful, the choice of new materials no less enticing, the creative work no less enjoyable, the subsequent satisfaction no less complete.

But, it may be argued, wall-papers tear and fade; paint and furnishings become worn and dingy; whereas plants live on, renewing their own upholstery each year and increasing in beauty and in size with every passing season. The very fact that plants are constantly growing larger is sufficient reason for occasionally, if not frequently, rearranging and replanting them; especially since there is a tendency in new plantings largely to disregard the effect of future growth.

ONCE men planted trees and shrubs about their homesteads partly for their own pleasure, but more for the sake of what their children and their children's children would enjoy in the form of fruit and fragrance, timber and gracious shade—even though, during their lives, the plantings may have appeared rather sparse and open. To-day we plant our shrubs and perennials in dense masses—for immediate effect; we move in thirty-year old Elms, Oaks, and Maples that we may enjoy their shade this year. In creating these overnight results we necessarily crowd together more stock than can properly occupy the same space ten (or even half a dozen) years hence. Future harmonious relations, natural development, and the enjoyment of "equal rights" are sacrificed on the altar of to-day's desires.

Henry Hicks—he who has made the transplanting of big trees a specialized industry—is also a genial philosopher in the problems of better rural living and has forcibly phrased what is a feeling common to many of us. He says, "the great social problem to-day is that of showing people how to live happily though crowded." It is another phase of that same problem that confronts us in many gardens otherwise delightful, except that the crowded condition in the gardens is neither necessary nor inevitable.

Often in individual instances do we move big trees, shrubs in full leaf, and perennial plants in blossom, which is proof enough that we can do the same thing on a larger scale. What if a Lilac or a Forsythia is six or eight feet tall and, presumably, a "fixture." If it is where it shouldn't be, root prune it in advance, dig it with a ball of earth, cut it back anywhere from sixty to ninety per cent. above ground—and put it where it ought to go, in full faith and confidence.

If thy hedge offend thee, by taking too much plant food from the Roses—as it probably does if it is Privet or Osage Orange—pluck it out by the roots, and set in its place a windbreak of conifers, with Azaleas, Laurel, or Rhododendrons nestling at their feet and creating a screen of both foliage and color. If you lack space in which to set out the surplus, thinned-out specimens, better give them away, or destroy them, than leave them to clutter up the garden and obstruct the development of your ideas. After all, is there anything in which we get a more generous money's worth than in plants, trees, shrubs, bulbs, and seeds? We can afford to be prodigal.

But quite apart from any refurnishing by new plantings, surprising transformations can often be effected merely by the shifting and regrouping of specimens without the necessity of either taking from or adding to the original materials.

It may be hard to conceive of anything in any particular bed except Cannas, or Dahlias, or Roses, after they have grown there for a dozen years or more. But how do you know that you will not like something else just as well, if not much better?

Of course, there must be method and plan behind any garden reconstruction work—and during winter, while snow, ice, and frozen soil prevent outdoor activity, is the time to formulate and perfect new plans and set down in black and white memoranda for next season's changes. Thus, temporarily, gardening takes its place among the pleasurable "indoor sports."

Progress is change; and in progress alone is life. As Ambassador Walter Page once remarked, "When you get everything fixed and finished, just as you want it—you might as well die. There'll be nothing else to do."

Why have a static garden, when it may so easily be made ecstatic?

GETTING THE PAPER PLAN INTO USE

IT IS never too soon to make plans for next year's garden. When everything is clearly mapped out on paper, instead of being more or less vaguely held in the mind, the chances for improvements and modifications that will give better results are much increased. For making the garden plan there is prob-

ably nothing better than paper that is ruled both ways in squares about an eighth of an inch in diameter. This may be obtained very cheaply at a stationer's. If you can allow four of these squares—a square quarter inch—for each square foot of the garden you can locate plantings pretty accurately.

With things decided on, and the plan of the garden accurately recorded on paper, advantage should be taken of the first suitable weather conditions to stake the real garden, that is, to begin building from the garden plan by driving a marking stake for the features shown on the paper. In the vegetable garden, the end of each row is indicated. By this method planting in any place that the plan provides for can be done whenever the material arrives.

But long before this work is to be done the catalogues will be coming in. Get as many of them as you can, and study them all. Don't hunt for cheap seed or cheap nursery stock, but buy of houses of good standing and get their best quality. Where a dealer makes a speciality of any variety or particular group, buy of him. As long as he is specializing he is likely to keep up his standard of quality.

In the meantime there are many other things to do. The gardener who does not learn something from his papers and books during the winter has neglected his opportunities. It is well to review your reading material, and more than once if opportunity offers—for even if you have studied everything carefully a re-reading will nearly always remind you of something you had forgotten. Sometimes, too, you will come across information that will explain what appeared to be a very mysterious happening in last summer's garden and will thus be prepared to prevent or remedy a similar occurrence.

FLOWER PAINTERS THAT REALLY PAINT FLOWERS

THE gardener with sufficient humor to over balance any ensuing exasperation can find considerable amusement in a review of past and present-day "flower paintings," which are (with a few conspicuous exceptions) not paintings of flowers at all but chiefly daubs of color, massed or scattered, and as such tickling the spectator's fancy—or otherwise—according to his mental mood and his taste in hues.

Why, the gardener wonders, have flowers been so largely abandoned to the school miss and other indolent dabblers in aquarelle? Surely subjects so lovely, so individual, often so miraculously unrepeatable are worthy of the serious consideration, the accurate portraiture accorded the animal kingdom. What painter would want or dare to present a three-legged dog or a man with two noses and feel the atrocity justified because he had incidentally achieved some magnificent colour effects? An inconceivable absurdity! Yet how often is the plant world so victimized!

The explanation may be, after all, rather a simple one—the artist is normally—perhaps necessarily—a restless, rootless city-dweller, seeking nature in her emotional moods on mountain tops and along the sea, unfamiliar with the pregnant quietude of gardens where miracles unfold day by day for patient eyes that will watch and wait. And when it comes to the matter of portraiture Mrs. Vander-ash can always refuse her check if the portrait doesn't please, whereas the only form of protest possible to Mrs. Tiger-lily is to slide silently away from under the offending brush and off the canvas altogether.

Fortunately, however, for the grower of flowers in particular and the lover of truth in general, things are on the mend! How heartening to find that Ben Foster (Winter Exhibition of The National Academy of Design, December, 1921,) has taken to painting Marigolds! What a glowing greeting they threw across the wide, bare spaces of the gallery, what a soul-warming greeting after wall upon wall of all sorts of pictures with "nary" a real flower among them—though, to be sure, Petunias were several times hinted at. Intelligently and sympathetically rendered in the rich, low-pitched range of color that characterizes Mr. Foster's landscapes, these Marigolds and sprays of purple-blue Larkspur were "sure enough" blossoms, grown perhaps in Mr. Foster's own garden, known and understood by him at any rate.

Truth may be told in as many ways as there are men to tell it—it does not impose hampering limitations but rather furnishes a fundamental inspiration which may be variously interpreted Frank Galsworthy with his airier medium, more precise manner, and a palette less rich but more brilliant, portrays the Marigold in quite other and quite as genuine fashion—a fact self evident to all gardeners so fortunate as to have seen Mr. Galsworthy's paintings either last season or this.

READERS of The Garden Magazine will have an opportunity to determine for themselves the merit not only of Mr. Galsworthy's recent work—of which a happy example will be found on our February cover—but of some of the other moderns as well who are turning toward this branch of painting the skill and experience hitherto largely focussed in other fields. Carle J. Blenner is now painting flowers with all the sincerity and force he formerly put into the portraiture of people and is markedly successful in this, for him, comparatively new venture to which he brings a trained perception in matters artistic and an appreciative perception of the personality of flowers. We feel ourselves in luck to have secured a lovely, glowing bouquet by Mr. Blenner for our March issue—a happy assurance that flower painting has been lifted by competent hands out of the lap of the lazy, and that flowers are inheriting a rightful dignity in the realm of art.

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

When to Make Carnation Cuttings

To the Editor of The Garden Magazine:

THE best time to take Carnation cuttings is, I find, around the end of December or the first week in January. Then comes a period of dull, damp weather and the sand of the propagation bench will not dry out readily. Indeed, the first wetting of the sand is often all that is necessary until the slips are rooted. Thus the danger from "damping off" is reduced to a minimum. Around mid-January the sun begins to get stronger and it is therefore more difficult to get a good strike of rooted Carnations at that time.—J. J. Deehan, *Bryn Mawr, Pa.*

Delphiniums That Dress in Yellow

To the Editor of The Garden Magazine:

IN ANSWER to Mr. Hinckley's query as to Delphinium Zalil, I had it in bloom last summer from seed planted in the house late the spring before. Would doubtless do better in frames if one has them. I had eleven plants from a packet of seed. When transplanted—the soil is clay near an outcropping of limestone—in late summer the roots resembled carrots of an inch length. They disappeared soon, but all came up in the spring and four bloomed. The best one was more than two feet tall, branched low and with flowers to about six inches from the ground. They were of large size; between canary and sulphur in color, well spaced on the stalk, and lasted well, remaining in bloom six weeks or more.

In spite of the very dry weather, they ripened their seed and slowly dried off. The large leaves are very fine cut. Some pushed up growth late this fall. Now we have heavy snow with the ground not frozen. I expect them to do much better next year. Bloomed about a week later than the blue hybrids, on the 29th of June here.—C. G. Bush. *Rochester, Minn.*

The "Bird's Egg" Strain of Geranium

To the Editor The Garden Magazine:

THERE are Geraniums and Geraniums, for every purpose almost, according to the variety, but none has pleased me more than the "Bird's Egg" strain in which my interest was first excited by the appearance in one of my yearly collection of catalogues of an especially

"BIRD'S EGG" GERANIUMS

"I succeeded in producing wonderfully large, perfect, and well colored blossoms by using poultry droppings only as a fertilizer." So writes Mrs. Shockey of Georgetown, Ohio, with this stalwart truss to amply prove her contention

alluring picture and glowing description of them. The flowers are soft white and very delicately speckled—for all the world in the manner of a bird's egg—with specks of lavender. The plants grew well though not so rapidly as other sturdier, more common Geraniums which they much resemble in their habit and general character of dwarf, rather compact growth. Their foliage is rather more delicate, but clean and of a fresh green.

There are single and double varieties—Abel Le Franc (a delicate shade of lilac white) and Rosamond (a deep rose, dotted with carmine specks) are two doubles that have pleased me. Of the single varieties, Daumier, a soft, rosy lilac shot with deeper aniline dots is particularly pleasing; Skylark, snow-white with dots of rosy carmine, is very lovely; Baudalaire is a good-looking clear, rose pink with crimson-dotted white centre. To the lover of "something different anyhow" I know of nothing in the way of Geraniums that can meet that desire so well or fill the place of Bird's Egg Geraniums which certainly supply a new note of pleasure and beauty to any winter window garden, and are equally beautiful growing outside during the summer season.

The size of plants and blossoms as well depends mainly upon soil conditions, and, one might add, on the quantity and quality of fertilizer used. Some prefer bone meal for all pot plants, but I would rather have poultry droppings. A bit of such "old" manure, about the size of a walnut, buried in the earth to the side of the plant, is sufficient; and in a very short time a marked difference will be noted in growth, richness, size, and coloring of the blossoms. Do not allow it to touch their roots as they will be injured by "burning." I have even used fresh droppings in this way, quite successfully. The soil for Geraniums should be light and well drained; any good garden soil will answer. Put clinkers, bits of broken china, pottery, etc., in the bottom of the containers to allow for drainage, and water frequently but sparingly; warmed water is preferable. Cold, wet, poorly drained soil is the cause of certain mildew and a rotting off at the base of plants.

Do not leave too near windows or in drafts at night. Strong, well-rooted, true-to-name plants are best to buy, as they are ready to grow and blossom. They thrive most in broad, full sunshine, especially during the winter season, the time their delicate, sweet beauty is certainly attractive and appreciated.—G. H. Shockey, *Ohio.*

The Vigor of Lilium Auratum

To the Editor of The Garden Magazine:

A QUERY in November as to the number of flowers Lilium auratum will produce brought to mind the fact that some years ago I saw a plant of this Lily exhibited at Derby, England, which had 157 flowers. The following is an account from a reliable source of another Lily also grown in England.

In 1865 a bulb of 2 in. diameter was placed in a 7 in. pot. This produced 3 flowers on one stem. In 1866 it was repotted producing 2 stems, 17 flowers, and in subsequent years its record was:

1867 repotted to 11 in. pot producing	3	stems,	53	flowers;	
1868 " " 16 " " "	12	"	100	flowers;	
1869 " " 17 " " "	39	"	(2 to 9 ft. high),	193	flowers;
1870, undisturbed, it produced	43	"	208	flowers.	

There is no doubt that much of the failure of this and other Lilies is due to cold storage. This takes out the vitality. The Japanese Lilies arrive late in the season when the ground is frozen up and the planting is left to spring. Sometimes they are carried over the winter in seed stores and from the treatment they get in some of these places it is a wonder they grow at all. I have had splendid success with Lilies planted in the Carolinas (that is on the higher lands). I don't think they succeed so well, generally speaking, in lower South Carolina.—H. J. Corfield, *Valencia, Pa.*

Berries for Ornament or for the Birds?

To the Editor of The Garden Magazine:

NOW, sir, there be two objects in view when planting berry-bearing plants for their fall and winter effects, both commendable—or rather I should say, either, not both, for the two are somewhat incompatible. It's a pretty enough idea, I allow you, to plant a garden to feed the birds, but I would that they did not rob me so promptly of all that I can get out of the planting—the contemplation of the rich ripe fruits for a while. Particularly do I admire the evergreen Firethorn, which I plant for my delectation in the last outdoor days of the fall, but our feathered friends hugely enjoy the repast of miniature apples thus offered. One berry to a mouthful—it's a regal feast indeed! And as the fruits take on color they attract in ratio, so that by the time that I should be feasting my eyes on wreathing strings of glowing orange-scarlet berries I, in fact, have practically none—but the birds have been fed.

So, at least, it was until this fall when in a moment of boyish-like prankishness I accidentally hit upon what looks like a practical method of temporary protection for my own desires. I had the spray pump at work with Black-leaf 40 and soap solution, and impulsively squirted a spray at the birds as they picked the berries. It was an idle impulse of petty annoyance. It did the birds no harm and it covered the berries with the solution. Since that moment, not a berry has been removed by my friends. I pass on the hint.—W. J. N., *Flushing, L. I.*

From a Texas Gardener

To the Editor of The Garden Magazine:

I AM the veriest amateur, yet your magazine is religiously read each month, and hoarded by me with care from year to year. I was delighted to find the two articles in the October number from Texas; one by Miss Markey from Chatfield; the other by Mr. Padrick of Ft. Worth. Only one familiar with this section for a long period of time can give such thorough appreciation and unqualified indorsement of Mr. Padrick's ideas as they deserve.

When the November number arrived to-day and I found that December is to be devoted to California, I sighed with the longing that Texas might be so fortunate at some time! As I turned and came to "The Open Column," I found—to my joy—that some one else had felt a similar longing and pioneered in the request; only the term "South-

ern" would scarcely fill our need, as that implies a region where nature is consistently kind, and needs but little help.

Do send out a call for "those who know" to "come over into Macedonia and help"—perhaps Mr. Padrick can do some missionary work—or Mr. Ramsey of Austin—I understand that he specializes in things suitable for our fickle but mostly warm and dry country.

In thinking of our climate I am reminded of the little girl, who when good, "was very, very good—but when bad, she was horrid!" So, while from year to year we revel in Roses in the spring time (my Silver Moon each year is a thing of beauty), and take what joy we may from bulbs and blooming shrubs—and an occasional Delphinium which will hoist its head in its turquoise glory, and come nevermore; only one afflicted with the ever-recurring floral mania, or mid-summer madness, has the courage to attempt much. I plead guilty to having been more than usually so afflicted last spring, and dared much with Dahlias! Think of it—ye who know Texas! Still, I had some lovely ones; but when cut they simply would not hold up their heads—perhaps in resentment at being brought so far south. However, if I can run the gamut of my friends' derisive smiles, I shall try again.

All success to The Garden Magazine. I hope never to miss it.—Mrs. William H. Benners, *Dallas.*

Queries from Indiana

To the Editor of The Garden Magazine:

WILL some one tell me where I can get a Rudbeckia or Black-eyed Susan that blooms the first of June? I saw some in flower along a railroad here in Indiana at that time, but do not know where so early-blooming a variety can be obtained.

Which of the Helianthus or other perennials spread badly?

Also I want to say a word for Collinsia, wrongly called Blue-eyed Mary or Innocence. When it comes up by the hundreds—as for me—in October, and blooms in April with and over the Tulips, it is a beautiful thing, blue and white, similar to Candytuft in form, with the happy habit of needing no care whatever and no protection.—Mrs. Cora Jewell, *Darlington, Indiana.*

Gardening on Different Soils

To the Editor of The Garden Magazine:

LAST spring when I planned my gardens I decided to start one on low ground and one on high so as to be sure of good results whichever way the weather went. Luckily it happened to turn out a fair season for both!

Along in the summer I noticed that the high garden looked the best because there were fewer weeds and worms working than in the lower garden. It was then that I decided to stick to the high ground. But when I gathered my garden stuff I found, after it was trimmed up, that the low garden produce looked a little the best. Thought nothing of this till I started selling and a purchaser picked up a turnip from each and, after tasting both, selected those from the lower garden. Wondering what the difference was I thereupon tasted them myself, discovering that those grown in the lower garden were sweeter and more tender. Then I tried cooking some cabbage, again finding the product of the lower garden more tender and it cooked at least ten minutes quicker than the other. The same is true of all the other kinds of produce.—D. F. Findley.

An Appreciative California Neighbor

To the Editor of The Garden Magazine:

IN SPITE of the vast amount of material which can be used in gardens here we are just beginning to make use of some of the new introductions and, indeed, even of some things known for many years but not common. The average garden still has little more than Geraniums, Roses, and Hydrangeas.

I should like to express my enjoyment of The Garden Magazine. If I could have but one magazine that would be my choice. With the exception of those of the first two or three years, I have them all bound and refer to them again and again. One feature I especially enjoyed was "Through the Garden Gate." I think that was due to its rather unusual subjects as well as the intimate quality of its appeal.—(Mrs.) Leila B. Stapleton, *Oroville, Calif.*

Find the Medlar!

To the Editor of The Garden Magazine:

BEFORE me is S. W. Fletcher's "How to Make a Fruit Garden," published by your firm; and I would be very much obliged if you could advise me where I could obtain some specimens of the "Medlar" as described in that book on page 202 (1920 Edition).—K. A. Rost, 445 *Leonard St., Park Ridge, Ill.*

—Can any one tell Mr. Rost where plants of Medlar may be had? It was listed in a few of the older catalogues of firms no longer in business. Perhaps someone can send seeds to our enquirer. Do not confuse the true Medlar, Mespilus, with the so-called Japan Medlar or Loquat.—Ed.

Enjoying Fresh Rhubarb All Winter

To the Editor of The Garden Magazine:

FOR eighteen years we have been doing the same thing with Rhubarb. We dig a few roots and leave the squares of dirt containing the roots on the ground until after the first or second freeze; then, while still frozen, they are easy to handle and carry to the cellar where darkness and warmth give us all of the fine Rhubarb we can use during the winter.—Cora J. Sheppard, *Shiloh, N. J.*

RHUBARB FOR THE WINTER

Digging the roots which are left out-of-doors until after a good freeze. When transferred to the cellar it is not long before we get all these fine stalks

JAPANESE LILIES THAT HAVE MADE THEMSELVES AT HOME ON SCOTTISH SOIL

Started more than thirty years ago from three or four bulbs. This lovely array of Lilies steadily increases in numbers and size, some of the older bulbs producing plants seven feet in height. Garden of Mrs. Adam Acton, "Ormidale," Brodick, Isle of Arran, Scotland

Japanese Lilies in Scotland

To the Editor of THE GARDEN MAGAZINE:

THE history of the bed of exceptionally beautiful Japanese Lilies shown in the accompanying photograph dates back to thirty years ago when a small group of bulbs, three or four only, were planted. Since then about every second year the soil has been replenished with fresh leaf mould and rich turf, the bulbs have been separated and re-arranged, and with careful management the stock has been steadily increased and improved.

The first year after the bulbs are re-planted is notable for the size of individual flowers produced. The second season, when the roots have become more firmly established, we see a much greater profusion of bloom, on an average about twelve flowers, eight inches across, to a spike. The height of the plants varies chiefly according to age; even the very young bulbs bear flowers, although these plants are little more than two feet high. The taller ones produce stems, four, five, and six feet high; some of them even reaching seven feet.

The question has been asked; why is it that these Liliums do so exceptionally well in this particular spot while in other regions growers meet with so much disappointment? This is difficult to answer, save that the surroundings are peculiarly suited to these bulbous plants. The part of the garden which they inhabit slopes down toward the north, where Brodick Bay stretches out and the Goatfill range towers aloft in the distance. The house makes an adequate shelter from the east winds, while tall Larch and Fir trees form a protection from the southwesterly gales. The proximity of the sea, and the sheltered nature of the garden are conducive to a prevailing temperature which is cool and even. The damp climate is also an asset and the Lilies never suffer from drought. The soil is a sandy loam, well drained, just such a kind as Potatoes thrive in.

Arran is well known for the seed potatoes it produces, both for the English markets and abroad, but these remarkable Lilies are not to be overlooked when the varied products of this beautiful island are considered.—E. W. TATTERSALL, *Brodick, Isle of Arran, Scotland.*

Where Are the Friends of Quarantine 37?

To the Editor of THE GARDEN MAGAZINE:

WILL you kindly let me know where I can buy the following seeds, bulbs, or plants mentioned in THE GARDEN MAGAZINE of September and October, 1921: Chinonodoxa, Galanthus, Muscari, Scilla siberica, Helleborus niger, Pulmonaria, Eranthis hyemalis?

I have written to several of the large dealers, but have not been able to secure any.—ANDREW N. SMITH, 918 *Ditmas Ave., Brooklyn, N. Y.*

The Fuchsias' Secret, and Peonies in Texas

To the Editor of THE GARDEN MAGAZINE:

IN THE November number of THE GARDEN MAGAZINE, which I have just been reading, I am glad to see so much about Fuchsias and to learn where different sorts may be obtained, as the Northern florists offer only double varieties and I have the idea that single varieties are the best for amateurs in the South.

I think I know the greatest trouble with the Fuchsia. It is red spider—a tiny red insect that infests the under side of the leaves. It is invisible to the naked eye, but can be seen through an ordinary magnifying glass and looks like a speck of cayenne pepper. The only thing that will destroy this insect is moisture, and this moisture must be in the atmosphere. Red spider cannot exist in a moist atmosphere; therefore, if one wants to have success with Fuchsias, a moist atmosphere is absolutely necessary. For those living in a dry climate I would

suggest standing the pots of Fuchsia on a table or bench over which a layer of sand has been spread an inch or two deep. Keep this sand wet and this will keep the air moist about the plants. For a plant already infested—and it shows this condition by the curling and dropping off of its leaves—it is just possible to dislodge the spider by forcibly spraying the under side of the leaves with water; or invert the pot, holding the plant in with both hands, then churn the foliage up and down quickly in a bucket of water.

The Fuchsia roots readily from cuttings of the tender growth and I would suggest starting new plants every year rather than depend upon the old plant surviving the hot dry southern summer.

Have any of the Texas readers had success with Peonies? If so, please tell me what variety—all I have tried and all I have ever seen tried or heard of grew well and some budded—but none bloomed. I read last year that they required a great deal of water when the buds were appearing. I watered mine every day from their first peep out of the ground, but every bud blighted as usual. I am curious to know if it is possible to have them bloom in this climate.—Miss Bettie Markey, *Chatfield, Texas.*

Too Much for the Mole

To the Editor of The Garden Magazine:

NEAR our house moles ran from tree to tree destroying the lawn. Last spring we heard they liked Castor Oil beans, to their sorrow. We made holes with a small round stick in their runways two or three inches below the surface and dropped a bean in each. That part of the lawn has been clear since. Only a few beans sprouted and the mower cut them. We put in plenty of beans. Our experience has been more damage from uprooting rather than from the actual eating of roots. —Mrs. Thos. A. Wynne, *Ind.*

—Mrs. Applegate's cry for relief from moles in September recalls the following which was published by Maurice Fuld. I have not had occasion to try it. Mr. Fuld said, "Watch for the newly made runner, for the mole will always return in the same day. Secure some calcium carbide, the same that is used to manufacture acetylene gas, in crystal form, open up the runner and drop a few crystals in each hole and cover the holes. It will turn to a killing gas quickly and reach the mole no matter where he is, and good-bye to the mole."—J. H. B., *Vermont.*

SOWING THE SEED IN HUMANS

THE mind of a child may be an asset to the community or it may become a dangerous liability. "Catch 'em young" is not only a maxim of animal trainers but it also embodies the belief and practice of the religious body which through centuries of study of the human mind has learned best how to hold its followers. It is simply recognizing the fact that impressions received in childhood are potent in the moulding of the man or woman of adult years.

The Garden Magazine became very much interested during the past summer in a practical effort to make better future Americans of New York's tenement children. It took the form of occupying the minds and spare time of some hundreds of children with the ambitions and pleasure of gardening instead of leaving them to register on their little brains the good and bad—mostly bad—of what they could pick up playing in the streets. Their play became really work and training and learning, but the tasks were joyous ones and there was keen competition among the children to share in them. Only a percentage of those who applied could be given the privileges of the Avenue A Gardens. We hope during the coming spring months to interest our readers in this valuable movement to the extent of largely increasing the opportunities it offers in the way of wholesome and improving occupation to children who would otherwise be left to drift.

The results of the season's work in Avenue A are material as well as spiritual. From their gathered crops the children, through one of their number as spokesman, sent to Mr. John D. Rockefeller, by whose aid the ground for the gardens had been secured, a basket of vegetables of their own raising. In acknowledgment they received the following letter:

Dear Adolph:

Thank you for yours of the 21st, with the fruit from the garden which you and the other boys have cultivated. I hope you will all learn not only to be good gardeners but to earn your own living and make your own way in the world, and be of use to yourselves, not only, but to your families and the world; and to this end I send each and every one of you my every best wish.

Sincerely,
John D. Rockefeller.

As said before, The Garden Magazine will have more to tell about the Avenue A Gardens when planting time comes.

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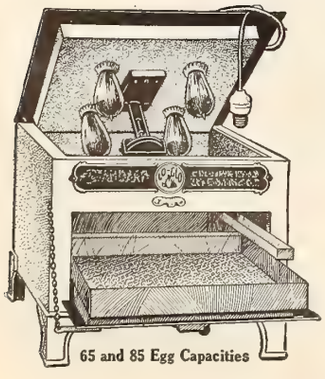

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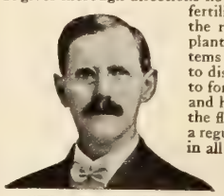

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Everything is arranged in the true Ten-Ten way, of groups of Ten.
It is complete in vegetable and flower seeds, perennials, flowering shrubs, evergreens and shade trees, and fruits as well.

It contains ten pages of delightful talks about old historic trees, that you will particularly enjoy.
Charmingly illustrated, as of yore.
Attractively bound in Springtime Willow Green.

You are most welcome to a copy.

Julius Roehrs Co
At The Sign of The Tree
Box 10 Rutherford N.J.

THE BEST BROAD LEAVES

Rhododendron, Kalmia, Holly, Leucothoë, Magnolia, Boxwood, Evonymus, also for variety and harmony, Azaleas, the best Conifers, Flowering Trees and Shrubs.

Discounts on early orders. **Introductory: During Jan., to near zones only,** 6 broad-leaves and 1 Conifer our selection, well-rooted, 6-9 in. $1.00 postpaid. 1 set only, to each *new* customer.

HARDY EVERGREEN GARDENS, Route 1, Old Fort, N. C.

Send for your copy of

The World's Most Select Dahlias

You will find described therein the choicest introductions of the most skilled Dahlia Hybridizers, both American and European.

This book will be ready shortly after January 1st, and if I have not already had the pleasure of placing your name on my mailing list, may I do so at once?

C. LOUIS ALLING
Dahlia Specialist
251 Court St. West Haven, Conn.

Now For GREATER ROSE Gardens!

For 1922 we announce

White ANGELUS

a newcomer without a flaw, bound to supersede all other whites. Of strongest blooming power, with perfect buds and flowers, attractive at all stages. Plants of Angelus, $2.50 each, $25.00 per dozen, but to secure broad distribution we offer it with

Four Other Winners

All Our Own Introductions

Columbia—Glowing Pink
Madame Butterfly—a harmony in pink, apricot and gold
Premier—Deep rose pink
Sunburst—Golden Yellow

Above four of the finest in Rosedom (worth $5.25 alone) together with Angelus, a total of 5 strong plants (ready for shipment about April 15th) for $5.00.

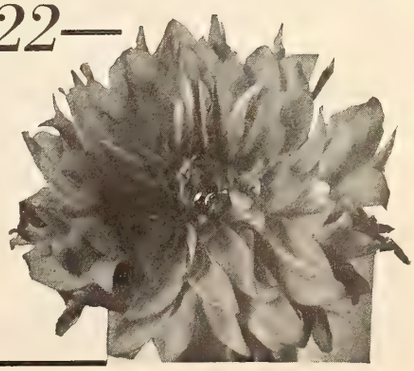
Catalogue offering the choicest among new plants for your garden gladly mailed free on request.

Chas. H. Totty Co.
Madison New Jersey

—*Dahlias for 1922*—

OUR Catalogue should be in the hands of all gardeners. We are Dahlia specialists and give fine cultural directions for same in this catalogue. Our collection of Dahlias is unexcelled. We also offer a comprehensive list of trees, shrubs, perennials, Irises, Peonies, Gladioli, etc. We supply everything for your garden at reasonable prices.

Send for a copy.



JACOB SCHULZ CO., INC.
550 South 4th Avenue Louisville, Ky.

Peas grown at Glen Cove, Long Island, from Sutton's Seeds.

Sutton's Seeds

THROUGHOUT the world, the name of Sutton stands for superlative excellence in seeds. We are more than seed merchants; we are seed fanciers. For 115 years, Sutton fathers have handed down to Sutton sons the skill and traditions of leaders in plant breeding and seed selection.

The illustrations show the vigor and quality of crops, from which Sutton's Seeds—vegetable, flower and grass—are selected. You can secure similar results, under favorable conditions, by planting Sutton's Seeds.

Send 35 cents for Sutton's splendid catalog. It really costs us much more. Credited on first order of $8.00 or over.

Only twenty-eight days required from date of your order for catalog or seeds to reach you, as we mail promptly. But you should lose no time sending for your copy of the catalog.

Royal Seed Establishment Sutton & Sons **READING ENGLAND**

The Seed Business With a Record of 115 Years

©

"American Beauty" Aster

A *NEW* Aster that Blooms from July to Frost

This is the first year seeds of these Early Blooming American Beauty Asters have been offered. Wonderful, large, full flowers 4 to 5 inches in diameter, no yellow centers, on long 24 inch strong stems. Bloom in July and last until frost. Three colors, pink, rose, purple, Packet 20 cts. one of each 50 cts. Pictured and described in our Seed Book.

AN EASILY READ SEED BOOK

Not a Big Confusing Catalogue

A book that lists, pictures and describes only the best of the flowers, vegetables, fruits, shrubs and roses for your garden. Not a big confusing catalogue but an easily read, condensed Seed and Plant Book. A real help in making selections for your garden. Send for it to-day, it is free.

HART & VICK - SEEDSMEN
Stone and Ely Sts. Rochester, N. Y.

GRAPE VINES

All the standard varieties for vineyards and home gardens. Prices right. Send to-day for a copy of our Grape Catalogue FREE.

T. S. HUBBARD CO., Box 18, Fredonia, N. Y.

WAGNER FLOWERS

FREE CATALOG to Garden Lovers

Gives complete list of Wagner Roses, Hardy Flowers, Bulbs, Shrubs, Trees and Evergreens. Tells you how to make your home surroundings beautiful. Explains the mail service Landscape Department.

Write to-day for catalogue 273

Wagner Park Nurseries
Box 73, Sidney, Ohio

Nurserymen — Landscape Gardeners — Florists

The Glen Road Iris Gardens

Grace Sturtevant, Prop.

Orders entered for 1922 New catalogue out in February.

Wellesley Farms Massachusetts

Winter Dream Gardens

It used to be said of an old braggart around these parts that he could "cradle more grain in the winter and chop more cordwood in the summertime than any other man around."

Well, that is the way I do most of my gardening I think sometimes, in my imagination. Anyway I can always plan more things to do in January than I can accomplish all the rest of the year.

If you are afflicted that way too, let's get acquainted. Send for my little catalogue, Hardy Plants for the Home Garden. Free to any address. Not so large as some but it is interesting.

W. A. TOOLE
Garry nee Dule **Baraboo, Wis.**

ANDORRA

High Grade Stock of Ornamental Trees and Shrubs. Catalogue on request.

ANDORRA NURSERIES
WM. WARNER HARPER, *Prop.*
CHESTNUT HILL PHILADELPHIA

ROSES

FAIRFAX ROSES are widely known for their exquisite beauty, deep fragrance of delicate refinement—and long life.

Fairfax Rose plants are nurtured under natural conditions—outdoors—wintered, and acclimated to all climates; tough canes and vigorous roots impart a hardiness to Fairfax plants which assures thriving growth anywhere, and a full, free and *beauteous bloom the first season.*

New Fairfax Rose Book Free

Send for new Rose-Book, containing beautiful illustrations and descriptions of roses—ROYAL ROSES OF PURITY AND BEAUTY—with valuable facts on growing roses.

W. R. GRAY
Box 6 Oakton, Fairfax County Virginia

DAHLIAS

None over a dollar and ranging to ten cents per tuber. A sifted, selected choice collection, twelve years in the making. Worth your attention, will save you money.

Twenty Dollar Prize Box

of tubers for best letter written me about dahlias. A $20.00 collection of dahlias will make a wonderful display in your garden. Send postal for catalogue and particulars. You may write the winning letter.

Bolles Dahlia Brochures (*Illus.*)

Written by an American Grower for American amateurs and professionals, for American conditions of climate, soils, and markets. Beautifully illustrated. Now on the press. Every dahlia lover, enthusiast, whether growing for joy, exhibition, or commercially, needs these booklets.

Harvesting and Storage, may save your crop of tubers, **Fertilizer and Large Blooms,** tells how to grow garden and exhibition blooms, Thirty-five cents each; **Cultivation** (*Double Number*), price fifty cents a copy. These three are off the press, and ready for your order to-day.

My 1922 Dahlia Catalogue now ready awaits your request

Charlton Burgess Bolles
R. F. D. 3, Box 81 Media, Penna.

VICK'S GARDEN & FLORAL GUIDE for 1922

IT'S FREE *WRITE TO-DAY*

A WORTH WHILE BOOK

For vegetable growers and all lovers of flowers. Lists the old stand-bys; tells of many new varieties. Valuable instructions on planting and care. Get the benefit of the experience of the oldest catalogue seed house and largest growers of Asters in America. For 73 years the leading authority on vegetable, flower and farm seeds, plants, bulbs, and fruits. 12 greenhouses. 500 acres.

Vick Quality Seeds Grow the Best Crops the Earth Produces

This book, the best we have issued, is *absolutely free. Send for your copy to-day before you forget. A postcard is sufficient.*

JAMES VICK'S SONS, 62 Stone St.
Rochester, N. Y. *The Flower City*

The Green Velvety Lawn

That you desire next summer must be fed now. Cover your grass with a liberal coat of

Our Specially Prepared
Cut TOBACCO Stems

Conceded by experts to be the ideal grass food. Contains no weed seed or insect pests. Easily handled. No objectionable odor. Will not burn your lawn, keeps away ants, moles, worms, etc.

NOW is the time to apply these stems—Put them on top of the snow—The succeeding snows and rains will leach out the potash nitrogen and phosphoric acid—Feeding the roots of the grass. 100 lbs. covers 200-300 square feet. **100 lbs., $2.00—2000 lbs., $25.00**

Our specially prepared *Cut Tobacco Stems* are a wonderful fertilizer for your garden next spring.

Write to-day for special leaflet explaning the value of our products to gardening either indoors or out.

Lancaster Tobacco Products Co.
Lancaster Box 2182 Pennsylvania

What You Can Do In January

Suggestions from Henry Hicks

Winter planting is practical, economical, safe and sane.

I once asked Arthur Herrington, manager of the New York International Flower Shows, over ten years superintendent for H. McK. Twombley, and in his early days gardener for William Robinson, the great garden authority of England, why people thought of planting in the Spring only. He answered, "Tradition."

As mentioned in our December ad. we have been winter planting for twenty years. Some winters the ground does not freeze more than four inches and at other times the mulch in December or early January keeps out the frost. Only two or three times in the twenty years has it frozen in late January sufficiently to stop planting. This planting is particularly practical near the coast, as on Long Island.

Time Saving is the Greatest Material Achievement of the Age

In whichever of Shakespeare's seven ages of man you are in you wish to save time.

What you can do now is to think where you need a wall of green, a hedge, a screen or windbreak of pine, fir, holly, blueberry, laurel, arbutus; sketch it out in your mind or on paper, come to the Hicks Nurseries and label the trees. To make sure that the ground does not freeze deeper and make it difficult to plant, we will give you some salt hay to mulch the ground. We can usually do the planting within a week. You can get what you want without waiting.

The reason we talk winter planting in this ad. is that we will be more than busy next Spring planting all sorts of little shrubs and hedges. Secondly, it is not as advantageous to plant these little things in Winter and it may not pay to mulch the ground for them. With time saving trees it does pay to have it done in the Winter when you have plenty of men and we have plenty of men. It may cost 25 cents extra to plant a $10.00 pine tree. We will be glad to credit you 50 cents in accordance with our December advertisement—*$2.00 for one,* or whatever it costs you for mulching.

SPECIAL OFFER AT REDUCED PRICES

	Height	Diam.	Age	Each	Ten
NORWAY MAPLE—	18 feet	3½ inches	14 years	$ 8.00	$ 75.00
	24-26 feet	7 inches	20 years	80.00	750.00
PIN OAK—	14-18 feet	3 inches	14 years	15.00	120.00
	16-20 feet	3½ inches	15 years	20.00	175.00
PINE—	6- 8 feet		8 years	10.00	75.00
	8-10 feet		10 years	15.00	125.00

Any way, come to the Nurseries. The roads are good. They keep them open with a snow plow. Pick out the time saving fruit trees, count fruit spurs. Perhaps what you can't have this Winter, you can have next Spring. Pick bouquets and get acquainted with some new evergreens. If you can't come send for "Home Landscapes," commuters' edition, illustrated by pastels by Miss Carlisle, of little Long Island gardens.

A big shade tree or a group of shade trees such as oak, linden, beech may be just what is necessary to give your place prestige. January may be just the time to do it.

All plants from Hicks Nurseries are guaranteed to grow satisfactorily or replaced with a new tree, dug and loaded at the nurseries.

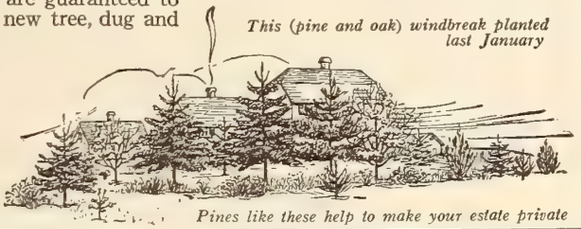
Henry Hicks

Hicks Nurseries

Box M

Westbury, L. I., N. Y.

This (pine and oak) windbreak planted last January



Pines like these help to make your estate private

Huntington Seeds, Bulbs, Plants

QUALITY SERVICE FAIR PRICE

Three quite necessary ingredients to have incorporated in the policy of your seed and plant house.

Complete line of Perennial Plants and Annual seeds. The longest list of Gladioli offered in America. Fresh and true Perennial Seeds, mostly home gathered. We are among the largest planters of our specialties. 1920 prices greatly reduced.

Write for free Catalogue to

RALPH E. HUNTINGTON **Painesville, Ohio**

Do You Wish Gladiolus Names or Gladiolus Originality?

Unnamed sorts are generally named varieties which have lost, through mixture with other sorts, their points of distinction.

My unnamed *Primulinus Gladiolus* are very different. I have hundreds of new seedling varieties *which have never been named.* Many of them are entirely new in their attractive combinations of colors, and their distinctive beauty does not suffer from comparison with the best named sorts. They were originated during the war, when sufficient help to classify, name and segregate them could not be obtained. If these Gladioli were named and properly classified you would pay far more than the price I ask. You get the advantage of beautiful new originations at the prices of varieties which have long been on the market.

Price of these Unnamed Seedlings (practically all different) $2.00 per doz., $15.00 per 100

Afterglow, Dawn, War, Peace and other introductions of mine became so popular, and created such a wide demand for bulbs that until this year I have not been able to offer a surplus. For 1922, in addition to the seedlings above, I can supply standard and new varieties for those who are acquainted with Gladiolus, besides some superb collections for gardeners who wish representative blooms, yet who are unskilled in selection. Details and prices of these collections supplied on request.

ARTHUR COWEE, *Meadowvale Farms*
Box 41 Berlin, New York

CHERRY HILL QUALITY

A SELECT STRAIN OF PEONIES OVER FIFTY YEARS IN DEVELOPING. IRIS, PHLOX, HARDY GARDEN PERENNIALS.

SPECIMEN EVERGREENS, SHRUBS, SHADE TREES, THAT WILL SATISFY THOSE TO WHOM QUALITY IS UPPERMOST.

CATALOGUE

T. C. THURLOW'S SONS, INC.
CHERRY HILL NURSERIES WEST NEWBURY, MASS.

Perfection Seeds, Bulbs Plants and Garden Requisites for 1922

That's the name of our catalogue, just off the presses.

There's a particular excellence about the seeds and plants we offer that you'd probably like to know about. You might ask your neighbors about us, but the fact that they use our seeds may be one of their cherished garden secrets!

Write for our catalogue; then you can see for yourself

WILLIAM M. HUNT & CO., Inc.
148 CHAMBERS ST., NEW YORK

ROSES *of New Castle*

Are the hardiest, sturdiest, freest blooming rose plants in America. Always grown on their own roots in the fertile soil of New Castle. We are expert Rose growers and give you the benefit of a lifetime's experience and the most select list in America. Every desirable Rose now cultivated in America is included in our immense stock—and the prices are right.

Our rose book for 1922, ROSES OF NEW CASTLE, tells you how to make rose growing a success. The most complete book on rose culture ever published, and elaborately printed in actual colors. Gives all information that you need. Send for your copy to-day—a postal will do. Address

HELLER BROS. CO., Box 121, New Castle, Indiana

Only The Best In Gladioli—

A post card will bring you my 1922 Catalogue giving descriptions and illustrations of many of the finest gladioli grown, also bargain prices on early and special orders.

The Home of
GLADIOLUS "DOROTHY McKIBBIN"
the new early ruffled pink.

JOHN H. McKIBBIN
1309 Division Street, Goshen, Indiana

Special for Spring, 1922

RHODODENDRONS

IN CAR LOTS
Varieties
Catawbiense, Carolinianum & Maximum

KALMIA LATIFOLIA
FRUIT TREES AND FRUIT PLANTS

Price upon request—also General Price List

MORRIS NURSERY COMPANY
1133 Broadway New York City, N.Y.

USUALLY BEARS FIRST YEAR PLANTED

Yellow Free-Stone

Ripe in August

ROCHESTER PEACH

Always the Second Year—Breaks Records the Third Year

Do you ask stronger evidence, read this:

403 Perfect peaches on 4 year old tree.

Mr. C. E. Strawbridge, of Lima, Ohio, writes us under date of August 25, 1920, as follows: "On April 10, 1916, I set out one of your new Rochester Peach trees. Last year we picked 5 peaches from it, each averaging the size of an average tea cup. **THIS YEAR WE HAVE PICKED EXACTLY 403 LARGE PEACHES FROM THIS ONE TREE.** Many people have seen this tree, and can hardly believe their own eyes. One of its admirers was Postmaster J. E. Sullivan, who wants me to put him in touch with the "FELLOWS WHO HAVE SUCH TREES FOR SALE."

TREES planted in Spring, 1918, bore 150 to 200 peaches past summer.

THE EARLIEST YELLOW FREESTONE PEACH KNOWN

"Rochester is greatest money making peach in the world"—Statement by large orchardist.

Originated in Rochester, New York, tree is a strong, upright grower, **has stood sixteen degrees below zero and produced a full crop,** while the Elberta and Crawford, under the same conditions in the same orchard, produced no blossoms and consequently no fruit.

Mr. Yarker, Greece, N. Y., who has an orchard of 500 trees, reports 17 peaches picked in August from a tree planted the previous spring.

Mr. C. M. Thomas, 215 W. 40th St., Savannah, Ga., purchased a Rochester Peach from us last February and picked the first fruit in July.

Catalogue—For descriptions and prices of a complete list of Glenwood products send for a copy of our 1922 catalogue of dependable Trees and Plants—it's free.

☞ ***We are headquarters for genuine Rochester Peach***

GLEN BROS., Inc., Glenwood Nursery, Established 1866
Rochester, N. Y.

Right Now Is the Proper Time

TO PLAN and solve your spring planting problems. Take advantage of the winter inactivity in order that no time be lost when every hour is valuable later on.

Should ou run across any particularly knotty problems, we shall be delighted to assist in their solution. Our service department is maintained for the sole purpose of assisting sincerely interested enthusiasts to obtain the maximum results by guiding their efforts with professional advice. This service is cheerfully rendered absolutely gratis—it entails no obligations whatsoever.

Write us in detail. Tell us what you hope to accomplish. Our experts will co-operate heartily.

Send for our catalogue. You will find that it contains a wealth of practical information. Besides, we stand ready to supplement it with more definite data, should you wish it.

"Successful For Over a Century"

AMERICAN NURSERIES

H. E. Holden, *Manager*

Singer Building

New York

Carters TESTED SEEDS 85th Year

121st Year of Thorburns SEEDS

"They Come Up Smiling"

SEED SERVICE —PLUS

FOR 121 years J. M. Thorburn & Company specialized in high-quality seeds. Their service to the American public, their quality of merchandise, their dependability is well known the country over.

For 85 years James Carter & Company of England has been supplying garden lovers everywhere with "tested" seeds under the label of "Carters Tested Seeds"—seeds selected from strong, vigorous plants, true to type and of the best strains.

We wish to announce to the American garden loving public the consolidation of these two companies. Over two centuries of seed service-ability are now united into a single organization and we are enabled to give you a service never before obtainable in this country.

Through our different sources of supply we are in a position to furnish seed grown in a locality where inbred strength means success to your planting and our tests have eliminated all but the highest grade seed.

J. M. THORBURN & COMPANY
Founded 1802

JAMES CARTER & COMPANY
Raynes Park, London, England
Founded 1836

The first catalogue of the consolidated companies will be ready for distribution in January.

You should have a copy of this catalogue to plan your garden for the coming season.

Write us mentioning Garden Magazine, and we will forward our 1922 Garden Book with our compliments.

Carters Tested Seeds INC.

Consolidated with

J. M. THORBURN & COMPANY

53 Barclay Street New York

Canadian Branch: 133 King Street East, Toronto, Canada

Old and prospective customers are cordially invited to call on us in the remodeled establishment for Seed Service Plus.

A "GLAD" MESSAGE

SPRING with all its lustre will be here before we are aware of it. Let us start a garden of GLADIOLI this season. For the small sum of $1.00 I will send to you postpaid any one of the following collections:

SPECIAL OFFER 1
24 Bulbs for $1.00 Postpaid

3 AMERICA, Lavender-Pink
3 BERNICE, Cream, Suffused Pink
3 BLACK HAWK, Cardinal Red
3 MIRANDA, Yellow
3 CRACKERJACK, Maroon
3 HALLEY, Salmon-Pink
3 MEADOWVALE, White
3 PANSY, Dark Blue

SPECIAL OFFER 2
16 Bulbs for $1.00 Postpaid

2 INTENSITY, Bright Red
2 SUMMER, Mauve-Lilac
2 NIAGARA, Creamy Yellow
2 PRES. TAFT, Delicate Pink
2 MRS. WATT, Wine Color
2 IDA VAN, Deep Scarlet
2 SCARSDALE, Pink-Lavender
2 FAUST, "Harvard" Crimson

SPECIAL OFFER 3
10 Bulbs for $1.00 Postpaid

1 CLARICE, Rose Pink
1 PRINCE OF WALES, Orange
1 SCHWABEN, Canary Yellow
1 PEACE, White
1 MARY FENNELL, Light Lavender
1 CONSPICUOUS, Light Blue
1 DISTINCTION, Deep Wine Red
1 WILBRINK, Flesh Color
1 MRS. F. PENDLETON, Pink. Carmine Throat
1 EMPRESS OF INDIA, Very Dark Red

Cultural Directions Sent with Each Order

Do not fail to ask for a copy of my new 1922 catalogue, containing color description of more than 130 varieties.

JELLE ROOS
GLADIOLUS SPECIALIST
Drawer D
CONCORD MASS.

Livingston's Famous Tomatoes

STANDARD everywhere—at Agricultural Colleges and Experiment Stations, among all gardeners and truckers, and finest for private gardens. We originate varieties for all climates and conditions, for local or distant markets. Hundreds of acres, tons of high grade seed, 60 years of experience as growers, all mean surest satisfaction and profit to planters of Livingston's True Blue Tomato Seeds. All size packages put up under United States registered Trade Mark seal. No other genuine Livingston grown. Order direct from us and protect yourself.

Livingston's Four Big Specials

Livingston's New Manyfold
Our latest introduction. Heavy cropper. Grows in clusters of from five fruits upwards. All marketable size. Early to mature. Bright red—solid. Excellent quality. Pkt. 15c, ½ oz. 40c., oz. $.70, ¼ lb. $2.00, lb. $7.50.

Livingston's Globe
The greatest shipping tomato known. Finest early purple tomato in existence. Very distinct in shape, firm fleshed, of delicate flavor. Splendid for slicing and shipping. Pkt. 10c, ½ oz. 25c, oz. 45c, lb. $5.00.

Livingston's Stone
The greatest canning tomato in the world. Large, bright red, perfectly smooth. Big yielder. Finest flavor and best keeper in cultivation. Ideal for canning and catsup. Pkt. 10c, ½ oz. 25c, oz. 45c, lb. $5.00.

Livingston's Beauty
Greatest of all purple-colored home market sorts. Strong grower. Very productive. Large. Ripens early, has firm flesh of excellent quality. Pkt. 10c, ½ oz. 25c, oz. 45c, lb. $5.50. **Special prices quoted on larger quantities.**

Eight entire pages in our New 1922 Catalogue devoted to tomatoes

New, Big Catalogue FREE One of the finest seed guides published. Gives truthful descriptions and helpful cultural directions of the best, reliable sorts of vegetable, flower and field seeds. A copy of this instructive 96-page book is ready for you now. Write for it to-day.

The Livingston Seed Co., 1100 High Street, Columbus, Ohio

The Grace of Evergreens

The unchanging, dignified charm of an evergreen is like the steady, unwavering, quiet friendship of an old comrade. Its beauty is dignified, yet friendly, welcoming always—whether it be blustering Winter or blistering Summer.

Every home should have a setting of carefully chosen evergreens—*but*, they should be *very carefully* chosen. They should be only evergreens of *known* quality, such as

Send 10c for our 1922 Evergreen Book—full of informing evergreen selection and planting facts.

HILL'S EVERGREENS

Specify Hill's Evergreens when consulting with your Landscape Architect, Nurseryman or Florist. We have been Evergreen specialists for over three generations. Are in a position to supply choicest specimens of every desirable variety—millions of evergreens always in stock., Safe Delivery and Satisfaction Guaranteed. Write for copy of our latest Evergreen Book.

THE D. HILL NURSERY CO., Inc.
Evergreen Specialists for Over 60 Years
106 Cedar Street
Dundee, Ill.

D. HILL, Pres.,
The D. Hill Nursery Co., Inc.

A Sensation in Climbing Roses

THE illustration pictures the wonderful Paul's *Scarlet Climbing Rose* which was awarded the gold medal and cup at the National Rose Society Exhibit last year. At the Bagatelle Gardens, Paris, last spring, President Pennock reports that *"Paul's Scarlet stood out by far the best among the climbers and attracted the public probably more than any other rose."*

We regard Paul's Scarlet as far superior to the climbing American Beauty and the old time favorite Crimson Rambler. Vivid scarlet, slightly crimson, it makes a brilliant display for a long time in the garden. A strong grower, its full foilage being free from mildew, diseases, and insects. By cutting back it can be made a beautiful bush rose.

Plants from 2½" pots, 30c, 4 for $1.00, postpaid. 2 year old plants, 90c each, $9.00 per dozen; large specimen plants, $1.50 each. By express, with soil on roots. All plants grown on their own roots.

Our "New Guide to Rose Culture" for 1922 It's FREE

Illustrates wonderful "Dingee Roses" in natural colors. The lifetime experience of the *Oldest and Leading Rose Growers in America.* Offers 500 varieties Roses and other plants. bulbs and seeds and tells how to grow them. Edition limited. Established 1850. 70 Greenhouses.

THE DINGEE & CONARD CO., Box 137, West Grove, Pa.

Plain Facts About This Ornamental Greenhouse

Why talk of the obvious—why mention how attractive this greenhouse is? It isn't the self evident that you want information about. It's about what you can grow in a house this size that interests you. Likewise what its size is; how soon we can ship the materials; how long it will take to erect to be ready for your flower favorites, and all such likely facts?
The answer will be in our letter answer to your inquiry and in a booklet we have just published called "Owning Your Own Greenhouse." Send for the facts and the booklet.

Hitchings and Company

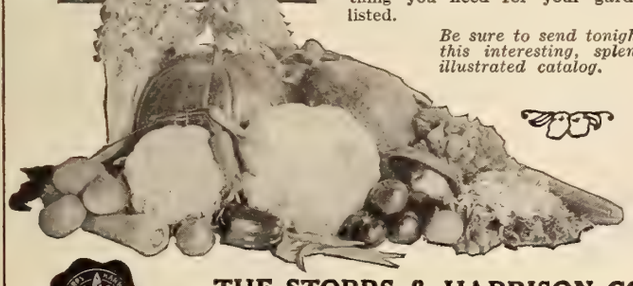
General Offices and Factory, Elizabeth, N. J.
New York, 101 Park Ave. Boston-9, 294 Washington St.

The Crowning Touch to the Home

It's just a house *until you plant a garden.* Then it becomes a *home*—a place where happiness can be found indoors or out—a living index to the character of those who live within. No wonder real home-makers give such care to planning beautiful gardens!

The choice of varieties is made easy for you by the S. & H. catalog. S. & H. ornamental shrubs are carefully selected, vigorous plants, with abundant foliage and finely colored bloom. All seeds listed are taken from unusually fine strains, proven by our own trials. S. & H. trees are preferred by professional nurserymen and orchardists all over the country. Nearly everything you need for your garden is listed.

Be sure to send tonight for this interesting, splendidly illustrated catalog.



THE STORRS & HARRISON CO.
Nurserymen and Seedsmen
Box 121 Painesville, Ohio

The Dahlia Farm

East Moriches, Long Island, N. Y.

DAHLIAS

BYRON STREETER. A fascinating shade of lilac purple, lightening on outer petals, overlaid with a wonderful bluish sheen. Immense flowers rigidly erect on long stems. Very lasting when cut..... ***$2.00***

ARGYLE. A marvelous flower of rich apricot, suffused carmine, making a gorgeous effect. A fine exhibition variety. A glory in the garden, and a fine shipper and keeper when cut ***$1.50***

THE MILLIONAIRE. A mammoth flower, of unusual depth, on good stem. Delicate lavender faintly shaded pink..... ***$1.50***

THE PRIDE OF CALIFORNIA. The American Beauty among dahlias. A huge full centered flower of crimson-red on long strong stem ***$1.50***

MRS. ATHERTON. We introduced this grand flower, and each year proves it better than we claimed. A mammoth bloom on strong stem, it is peer of the best in yellows..... ***$1.50***

We will send these 5 Decoratives, 1 field-grown tuber of each, postpaid to any address for $6.00

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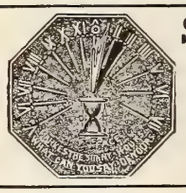

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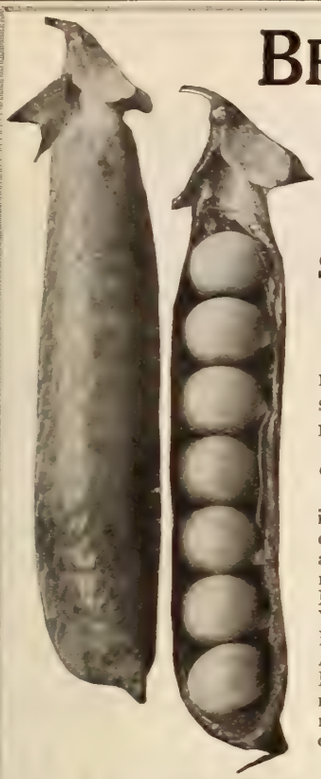

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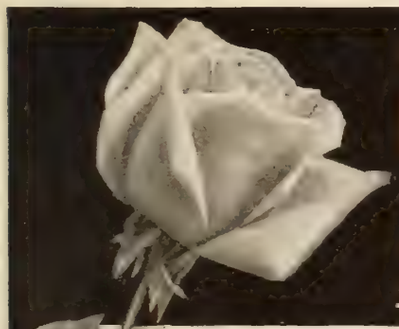

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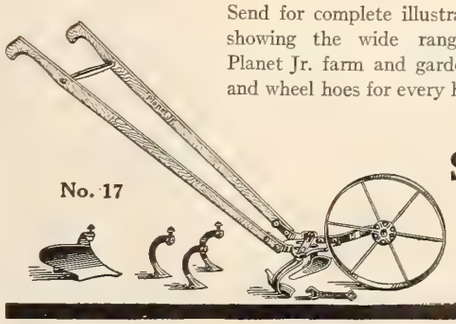

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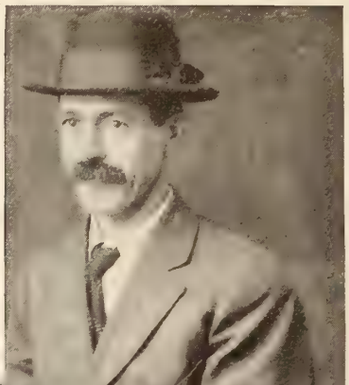

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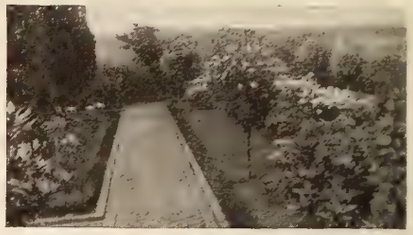

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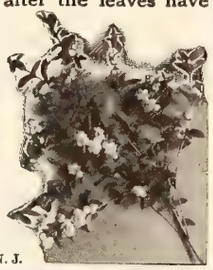

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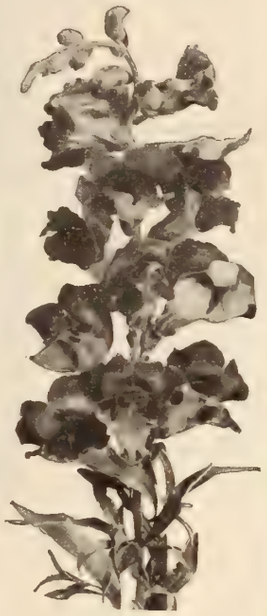

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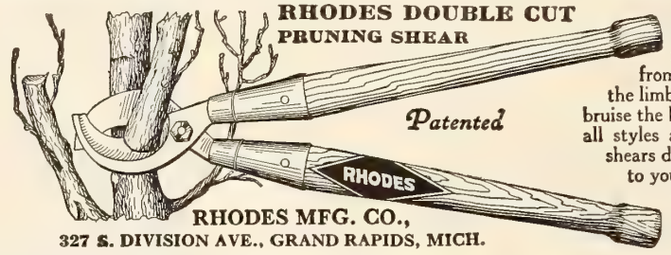

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THE COUNTRY LIFE PRESS, GARDEN CITY, N. Y.

Flowers from Seeds *Fruits for the Home* *Rock Gardens*

GARDEN MAGAZINE

FEB. 1922

25 CTS.

Vol. XXXIV. No. 6 February 1922

Doubleday, Page & Company, - Garden City, New York

Detroit

Vaughan's White—1922

Martha Washington

Vaughan's Gladioli

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(Seventh Year)

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FEBRUARY, 1922

THE GARDEN MAGAZINE

CONTENTS

PAGE

COVER DESIGN: "THE MIXED BOUQUET" *Frank Galsworthy*
(see article on page 300)

AN OLD ORCHARD CONVERTED TO BEAUTY - - - 289
Photograph by Mattie Edwards Hewitt

CAMELLIA COLLECTION OF W. R. COE - - - - - 290
Photograph by Mattie Edwards Hewitt

THE APPEALING INDOOR GARDEN - - - - - - - - 291
Photograph by The J. Horace McFarland Co.

THE MONTH'S REMINDER: WHEN TO DO WHAT YOU WANT TO DO - - - - - - - - - - - - - - 292

TREES DESTROYED BY ICE IN NEW ENGLAND
Photograph by the author *T. D. Hatfield* 293

WHAT, WHY, AND HOW MUCH AMONG THE ACCOMMODATING ANNUALS - - - - - *Adolph Kruhm* 294

GROWING SWEET-PEAS - - - - - - - - *A. W. Roe* 297

RECONSIDERING THE CAMELLIA - - *Leonard Barron* 298
Photographs by Mattie Edwards Hewitt and others

WHY DO PEOPLE PAINT FLOWERS? - *Frank Galsworthy* 300

SPEAKING OF GARDENS—Poem - *Florence Boyce Davis* 301

THAT ELUSIVE ELEMENT OF BEAUTY IN THE ROCK GARDEN - - - - - - - - - - *Clarence Fowler* 302
Photographs by H. G. Healy and F. A. Walter

THE MAKING OF THE MUNSTEAD PRIMROSE AND OTHER PLANT IMPROVEMENTS - *Gertrude Jekyll* 304
Photograph by The J. Horace McFarland Co.

HOW MOUNTAIN PLANTS BEHAVE WHEN THEY GO TO THE SEASIDE - - - - - - - *D. T. MacDougal* 305
Photograph by the author

THE ROMANCE OF ST. VALENTINE - *Jane Leslie Kift* 307
Photograph by the author

THE GARDENS AT "ARROW-WOOD" - - - - - - - - 308
Photographs supplied by Mrs. S. S. Montague

SOWING SEEDS FOR AN EARLY START - *W. L. Wilson* 310
Photographs by the author

A PICTORIAL HISTORY OF THE GARDEN—II *H. H. Manchester* 311
Illustrations supplied by the author

WALKS AND TALKS AT BREEZE HILL—VI *J. Horace McFarland* 314

LOOKING AT NEXT MONTH - - - - - - - - - - - 315

BRINGING ALPINE PLANTS INTO OUR GARDENS - - 316
Photographs by Arthur G. Eldredge and Leonard Barron
I. The Peculiar Needs of the Alpine Plants *Henri Correvon*
II. The Lessons of a Life-Time With Mountain Plants *Clarence Lown* 319
III. Rock Plants and Alpines Raised from Seed *Louise B. Wilder* 320

AUTOMOTIVE CULTIVATORS FOR THE MODERN GARDEN - - - - - - - - - - - - - - - - 322

WHAT, WHY, AND HOW MUCH FRUIT TO PLANT *John L. Doan* 323

AMONG OUR GARDEN NEIGHBORS - - - - - - - - 325
Jack Frost Not so Bad as He Is Painted
March's Flower Shows - - - - - - - - - - - - 326

THE OPEN COLUMN - - - - - - - - - - - - - - 326
Photograph by Raymond L. Fedder

TWO ROCKY MOUNTAIN PENTSTEMONS *S. B. Walker* 332

FERTILITY OF APPLES - - - - - - - *T. A. Weston* 350

TRUTH ABOUT A GARDEN - - - - - *Grace A. Hunter* 354

LEONARD BARRON, Editor

VOLUME XXXIV, No. 6

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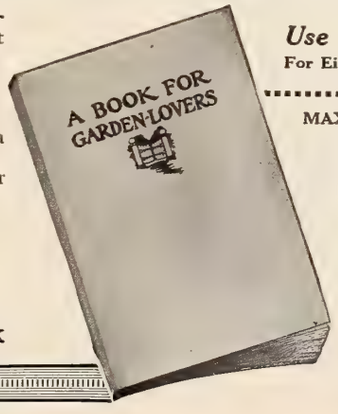

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I can furnish Rhododendrons, Mountain Laurel, Andromeda and other flowering evergreens in car load lots, at extremely low prices, if ordered quickly. Cars may be made up of single varieties, or in any desired mixture. Write me at once if you are interested. Perhaps your neighbor will join you in ordering, if you cannot use an entire car load yourself.

My Unusual Catalogue for 1922

is by far the best, most interesting and most helpful issue I have ever published. It describes and gives cultural directions for all the worth while native shrubs, evergreens, wild flowers and ferns. Profusely illustrated. Write for your copy ***to-day*** and be among the first to enjoy it. Also do not fail to let me hear from you, if you wish information regarding native plants, or Naturalistic plantings. Your letter will be promptly referred to the expert best qualified to answer it and he will give you in full detail the information you desire.

Edward Gillett, *Fern and Flower Farm*, Southwick, Mass.

286 Fifth Avenue NEW YORK CITY

1524 Chestnut Street PHILADELPHIA, PA.

Grow Fruit in Your Own Garden on

Dwarf Trees

$1.00 to $1.50 each

Apple — Pear — Peach — Plum — Cherry

AS PLANTED

PLANTED 3 YEARS

PLANTED 7 YEARS

A Customer Writes:

"This season all of my dwarf apple trees were a great success. Truly the little trees were a sight—were so loaded with large and beautiful fruit, that I had to brace nearly every limb."

You Can Have An Ideal Fruit Garden

Right in your own yard. Whether you have room for two trees or twenty, you can make your home orchard actually pay big returns in luscious fruit.

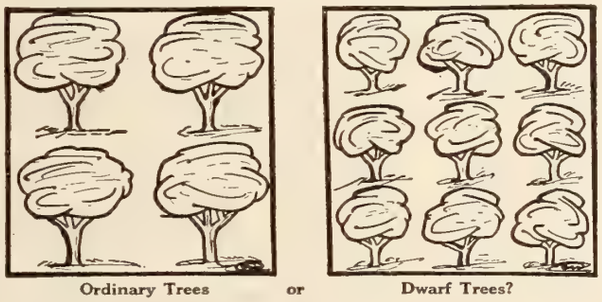
Europeans have taught us how to get the most out of small garden plots and now we can enjoy the fruit from several kinds of trees where only one was possible before.

ADVANTAGES OF PLANTING DWARF TREES

You can space them only twelve feet apart. Nine dwarfs require only the room of four ordinary trees. They are grown more easily and quickly and produce fruit much sooner. They also require less work.

WHICH WOULD YOU RATHER HAVE?

Four Kinds or Nine Kinds?



Ordinary Trees or Dwarf Trees?

GROWN ON DWARFING ROOTS

These trees are dwarfed by propagating on roots which have a dwarf habit of growth, and which impart this dwarf habit of growth to the tree. No tree so grown will ever attain the size of ordinary trees. They can be planted ten or twelve feet apart, and most of them begin fruiting from two to four years after planting.

HOW DWARF TREES BEAR

The following reports show what dwarf trees are doing: 32 peaches from a tree planted two years. 75 peaches the following year; nearly a bushel of Elberta peaches from a four year tree; two and one half bushels of Stayman Winesap apples from a tree planted five years; one barrel of McIntosh apples from a tree planted seven years; one four year quince matured 12 large fruits, the largest 14 ounces, besides 20 thinned out before maturity; 14 Bartlett pears from a three year tree; one and a half bushels of Clapp pears from a tree planted five years.

A FEW DWARFS LISTED IN OUR CATALOGUE

Delicious Apple—Large, dark red, one of the best, matures in November	$1.50 each
McIntosh Apple—Bright red, very fine flavor, matures in October	1.25 each
Scarlet Beauty Apple—Extremely large, dark red, fine, grown only by us	1.50 each
Wealthy Apple—Bright color, fruit very young, matures in September	1.25 each
Anjou Pear—Large, yellow faintly blushed, fine vinous flavor, late season	1.00 each
Seckel Pear—Small, very juicy, rich and spicy, one of the very best	1.00 each
Wilder Pear—Pale yellow, red cheek, rich flavor, ripe in August	1.00 each
Burbank Plum—Dark red, full of flavor, very productive	1.25 each
Imperial Epineuse Plum—Unsurpassed in quality by any other red plum	1.50 each
Reine Claude Plum—Best of the green plums, rich flavor, fine, juicy	1.25 each
Sultan Plum—Flat shape, dark red, juicy, pleasant flavor, very productive	1.25 each
Early Crawford Peach—Large, deep yellow, one of the handsomest and best	1.25 each
Elberta Peach—Yellow and very large, bears young, extremely productive	1.25 each
Greensboro Peach—White flesh, large, very showy, the earliest summer peach	1.25 each
Japan Dream Peach—Red flash, fine quality, will fruit a year after planting	1.50 each

Write for Complete Catalogue of Standard and Dwarf Fruit Trees—It's Free

THE VAN DUSEN NURSERIES, C. C. McKay, *Mgr.* Box G, Geneva, N. Y.

FRUITING APPLE TREES
12 feet apart

JAPAN DREAM PEACH
2 years old

One of many reports:

"The Dwarf Japan Dream peach you sold me in 1918, had 32 peaches last year. 75 this year—and the Dwarf Champion peach has 44 this year."

Making Your Own World BRIGHTER!

This is addressed *particularly* to the Business men and women among Garden Magazine Readers. You are familiar with the value of impressions that start the day right. You know how a beautiful sight works like a refreshing draught at the end of a long, hot business day. And those of you who have a lane or a drive as approach to your homes will appreciate lovely Bridal Wreath (Spirea Van Houttei) acting above as both, border *and* screen. It shuts out a nearby street, secures privacy for the home, and throughout May and early June meets the home comer with fragrance and beauty.

Will Your Paths Be Brighter Next Summer?

A question easily answered through the medium of our extra heavily rooted extra choice specimen plants of the best flowering shrubs for America. Here is a selection designed to give you an abundance of bloom this first year, a long season of flowers year after year, plus the satisfaction that no investment holds greater future rewards than this:

50 Fine Shrubs— Five Each of Ten Varieties—for $20.

Clethra alnifolia—Sweet Pepper Bush. Blooms in August.

Cornus alba Siberica—Dogwood. White flowers in June.

Deutzia—Pride of Rochester. Pink, in late June.

Forsythia Fortunei—Golden Bells—in very early spring.

Lilacs, several varieties—Blooming during May and June, shown alongside.

Philadelphus Coronarius—Mock Orange. Blooms in June.

Spirea Van Houttei—The greatest show of May, shown above.

Stephanandra flexuosa—Blooms in June, beautiful foliage.

Viburnum Opulus sterilis—July blooming Snowball.

Weigela Eva Rathke—Red. Blooms from spring until autumn.

Special Service and A Catalogue

While our free catalogue will prove helpful to the initiated, it also leaves many questions unanswered for the new comer to the ranks. It is the signers pleasure in business to help with personal and practical advice. Tell me the problems of your home grounds. If a life time experience with plants can help, their solution is yours for the asking, as is the catalogue.

AMERICAN NURSERIES

"Successful For Over a Century." H. E. Holden, *Manager.*

SINGER BUILDING, NEW YORK CITY

Let Primroses Glorify YOUR Rock Garden

Added charm may be given any and every rock garden by liberal planting of Primroses. And do you know that nearly 40 distinct varieties of Primulas are now available, giving you bloom from earliest spring until late summer?

Almost the first thing we did after starting in business was to develop our collection of Primroses. From England, Scotland, and Switzerland we secured the choicest available. Among others we offer Miss Jekyll's Munstead Strain of Polyanthus or Bunch Primroses. Besides rare new varieties of Auriculas, Bullesiana, and Japonica Hybrids, this nursery offers the

Choicest Collection of Rare Alpines and Hardy Plants in America

We would mention Androsace lanuginosa from the plateaus of the Northwestern Himalayas; Ramondia Pyrenaica, gathered in the Pyrenees mountains and a distant relative of the Primroses; Edraianthus graminifolius, a native of the Dalmatian Coast along the Adriatic Sea; Aethionema stylosum, tiny bushlings from the sunny limestones of the Levant; Cytisus in several varieties; these are dwarf brooms from Dalmatia and the Asiatic Islands and of inestimable value in the rock garden.

We could continue this most attractive list at length, but our descriptive catalogue will, we are sure, interest you. Besides providing the choicest now obtainable in the way of plant material, we aim to give

Service as Builders

We build and plant Rock Walls, Rockeries, Bog Gardens, and all plantings entailing the use of Alpines.

Consultation by appointment

Wolcott Nurseries

Jackson Clinton Road **Michigan**

Dahlia Enthusiasts
Please Meet
Ruth Van Fleet—
The Ideal Dahlia!

ONE of the finest of all Cactus Dahlias for cut flowers. A Stillman creation of the Loma family. Clear soft yellow with extremely large flowers of the most graceful form, measuring 6 to 8½ inches across. Note the long stems which extend to the bottom of the 10 inch vase. Ruth Van Fleet is equally good for garden or cutting. Its graceful flowers are held erect on long stiff stems. A free flowering Dahlia that must be seen to be appreciated. And be it noted particularly that above flowers were grown *without disbudding.* I do not disbud one of about a thousand different kinds which I grow each season, and for this reason my customers usually grow bigger Dahlias than I do.

Field-grown tubers $3.00 each.
4 bulbs $10.00. 12 bulbs, $25.00

To Secure Just the Dahlias For Your Specific Wants

If, after reading my new catalogue offered below, you find that you have certain ideas you want to carry out in your Dahlia Garden, I will esteem it a favor to help you by personal advice. No catalogue can answer every question which it raises in the reader's mind. Please feel that I shall be delighted to hear from you.

Please Let My Catalogue Help

Describes hundreds of the finest Dahlias of my own introduction as well as those of specialists the world over. If interested in Dahlias you will welcome this book which is free for the asking. Orders booked any time.

George L. Stillman
Dahlia Specialist
Westerly BOX C-22 Rhode Island

What's New This Year?

THE eternal question since the dawn of history, whether the subject be clothes, ideas or *Flowers!* Our business, for the past twenty years, has been the introduction of floral Novelties for American Gardens. Our Introductions in Roses, Carnations, Chrysanthemums and Dahlias represent the best efforts of the world's foremost hybridists.

In Roses, they include the splendid new Rose, "Souv. de Claudus Pernet," the Gold Medal Winner, from France. Two American successes, "Angelus," the superb white, and "Red Columbia."

Among the 'Mums, Pockett's Giant 'Mums from Australia and our own introduction in Pompons, "Red Doty," "Bronze Doty," and "Helena Flint."

Red Doty, wine red with a silvery reverse on underside of petals and showing up distinctly in the short crisp center petals, is one of the finest, if not the finest, we have distributed in several years. Illustrated above.

Among Single 'Mums, we prize "Countess Egmont," "Larchmont" and "Genevieve." Besides the "Judge Marean Novelties" among Dahlias, we offer this year, for the first time, our

New Heliotrope Royal Fragrance

The peer of any Heliotrope we have ever grown. Its deep, violet blue color and wonderful fragrance stamp it as the Heliotrope par-excellence! With all its wonderful characteristics, it is quite reasonable in price.

4 for $1.00, $2.50 per dozen

All these Novelties, and many other equally meritorious, are illustrated and described in our catalogue which has already been mailed to our regular customers. We invite all GARDEN MAGAZINE Readers to write for a copy, and please mention GARDEN MAGAZINE when writing.

Charles H. Totty Company
Headquarters for the Unusual among Novelties
Madison New Jersey

The Gardening World Takes Off Its Hat

TO THE CONCERN WHO COMES RIGHT TO THE FRONT WITH NOVELTIES THAT EVERY ONE WHO HAS A GARDEN CAN GROW.

THERE ARE NO TROUBLESOME OR DOUBTFUL FEATURES ABOUT THE FOLLOWING; THEY ARE OLD, YET EVER NEW.

YOU HAVE SEEN ASTERS. BUT NOT THIS SINGLE AMERICAN BRANCHING TYPE "HELVETIA," BEAUTIFUL DAISY-LIKE FLOWERS BORNE ON LONG STEMS PRESENTING A TRULY MAJESTIC APPEARANCE.

YOU KNOW THE CALIFORNIAN POPPY AND YOU AT ONCE THINK OF IT IN ITS FAMILIAR SCARLET. NOT SO. THINK OF IT IN A BEAUTIFUL SHADE OF MAUVE, THE MOST DESIRABLE COLOR OF PRESENT DAY FLORICULTURE.

YOUR OLD FAVORITE OF THE FALL, COSMOS, NO LONGER SO LATE. YOU CAN ENJOY THIS POPULAR FLOWER IN A VERY PLEASING DOUBLE PINK IN THE MONTH OF JULY.

NEW SINGLE ASTER

"Helvetia," Single late flowering Aster. Brilliant crimson. Hybrid from the American late branching type. This unusual color is very pleasing and is a much desired addition in "Helvetias."—Invaluable for cutting. Pkt. 50c, 5 Pkts. $2.00.

NEW ESCHSCHOLTZIA

"Eschscholtzia," (California Poppy.) *Mauve Beauty*, a positive new creation in California poppies. Color is beautiful shade of pure mauve. Wonderfully effective in beds and an admirable cut flower. Pkt. 50c, 5 Pkts., $2.00.

NEW EXTRA EARLY DOUBLE COSMOS

Cosmos. New extra Early Flowering Double: Ever since the Double Cosmos was introduced growers have been striving to obtain an early flowering Double. We are pleased to offer this novelty in a pleasing shade of pink.

The plants grow to about 3 ft. high, forming a perfect bush bearing gorgeous double flowers of rare beauty on long stems. Seed sown in April will bloom in July.

Pkt. 50c., 5 Pkts., $2.00

SPECIAL CATALOGUE OFFER. For $1.25 we will mail you postpaid one packet of each of these novelties, three pkts., together with our 1922 Catalogue. A collection that will give you something new in your garden or border, and something your neighbor hasn't seen. Our Spring Catalogue gives many helpful garden facts. A copy will be sent you on request.

Seedsmen Main Street **Bassi Frères de Paris** inc. New Rochelle New York

BROMFIELD'S DEPENDABLE SEEDS

Seed Service of an Unusual Kind

ELIMINATING undesirable varieties and confining our recommendations only to the best strains of the most highbred varieties of vegetables and flowers.

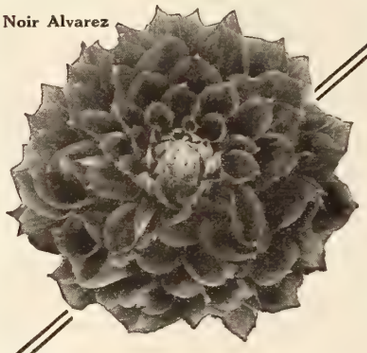
"Your Garden Year"

is the title of our catalogue, so plain and easily understood that it will meet your approval at once. It tells you about such new novelties as Golden Twelve Rowed Evergreen Sweet Corn, Bromfield's Early Wonder Beet, the finest quality Pole Beans yet discovered, a new Silver Rose Aster, Double Cosmos, a new Poppy from Europe, marvelous Pink Petunias and many more interesting and delightfully new Flowers and Vegetables. Send for a copy to-day. Mailed free.

Edward T. Bromfield Seed Co.

GARDEN CITY ~ NEW YORK

Noir Alvarez



Alexander's Seedlings

Three New Dahlias

My Dahlia experience extends over a peri d of more than twenty-five years and I can safely claim to know a good Seedling when I see it.

Poor Seedlings are plentiful enough and always have been, but good ones are scarce. The three varieties described below are good ones—any one of them will compare favorably with the best of the latest offerings regardless of price.

President Harding. (Alexander.) This is the finest of my new Peony-flowered seedlings, so good it is sure to become a favorite. Everyone who saw it growing in our fields spoke admiringly of it. Named expressly for and with permission of President Warren G. Harding. Six plants of it are to be grown on the White House Grounds this year. Its flowers are exceptionally large, and each petal curves gracefully, adding to its beauty. In color it is a pale golden yellow, blending to sulphur yellow at the tips. The flowers are well formed, with from five to six rows of petals, and show that beautiful golden center, so characteristic of the Peony-flowered type. I can highly recommend this new creation, as it was one of the very best, and produces its gigantic blossoms in great abundance. "President Harding" was one of the earliest to blossom and flowered continuously throughout the season. **$5.00 each.**

Noir Alvarez, Decorative. A gigantic, velvety ox-blood red, with fine stems, strong, upright habit of growth and a very profuse bloomer. The flowers grow 8 inches in diameter and are rather loosely built for a Decorative, with the centers always full. An extra fine dark colored variety. **$2.00 each.**

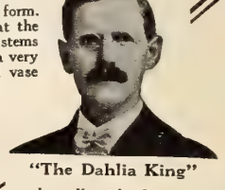
Bertha Bailey. Peony-flowered. Unique in coloring and form. Very large flowers of scarlet-red blending to lemon yellow at the center. The petals are long, curling, and loosely set. The stems are stiff enough to hold the bloom and very graceful This is a very beautiful variety and lends itself particularly to house and vase decoration. **$2.00 each.**

Please send for my Catalogue

J. K. ALEXANDER,

World's Largest Dahlia Grower

27-29 Central St., East Bridgewater, Mass.



"The Dahlia King"

who will, with pleasure, personally answer all questions received from Garden Magazine readers.

A Garden Full of Gladioli for $2.00

The Gladiolus is one of the most satisfactory flowers grown and there is no reason why every family cannot enjoy this grand flower—it is as easy to grow as the potato.

Bloom from July to frost if you plant a few bulbs each month from April to July.

For **Two Dollars** we will send **50 Bulbs** of our **Grand Prize** Mixture, which covers every conceivable shade in the Gladiolus kingdom.

Each year we sell thousands of these bulbs and received numerous testimonials as to their merits. **Order Your Bulbs Now,** so as to have them to plant when you begin making your garden.

Simple cultural directions in package

Mail this advertisement, or present at our store, with Check, Money Order, Cash or Stamps, and secure this splendid collection, sent prepaid to any point in the U. S. east of the Mississippi. **For points West and Canada add 25c—($2.25.)**

Our 1922 Spring Seed Annual sent on request

Stumpp & Walter Co 30-32 Barclay St. New York City

Wayside Gardens

Perennial Plants

100% pleasure from your garden can only be had if you use a sufficient number of hardy plants.

For immediate results plant only large field grown clumps of a quality that has helped us to establish the largest business in Perennial plants exclusively in America.

An illustrated catalogue offering border and rock garden plants sent on request. Landscape architects, nursery men and public institutions should kindly ask for a wholesale list.

MENTOR ***OHIO***

BLUEBERRY PIE—Hm!

"The Pie of Big Mouthfuls, Crushed Lusciously"

And Right from Blueberries in Your Own Garden

Can you imagine anything more satisfactory than having delicious blueberries growing in your own garden? No doubt you have enjoyed these wonderful fruits on the hotel or restaurant menu, served with cream for breakfast, or as blueberry pie or dumplings for luncheon or dinner. They are a fruit that satisfies for three meals a day and one dozen plants are quite sufficient to supply the average family with blueberries. They can be used freely for making breakfast muffins or preserves.

Hardy and Ornamental

The bushes we offer are the result of careful cultivation of the wild blueberries, and you want these bushy, well rooted plants to start with. As one of our good customers recently wrote us: *"I want 'Glenwood Grown' stock—no other will do."* The blueberry is one of the hardiest of all fruits. The bushes yield their juicy berries freely from early August until frost strikes them. The bushes are very ornamental, specially when they are filled with fruits, and when Jack Frost gives them a rich russet touch in autumn. We offer for spring planting, strong, bushy, well rooted plants, 2-3 ft. high.

Extract from letter received from a customer at Pittsburgh, Pa., dated Oct. 31st, 1921. (Name of customer furnished upon application):

"I have decided to place the order with you after getting over sixty Catalogs because I want good stock, and you seemed to have more of the kind of trees that I wanted than any others."

Dependable Trees and Plants

is the title of our complete guide to spring planting, of all that is best for the home garden. Besides offering the choicest in berry plants, fruit, and nut trees of all kinds, it will introduce to you the choicest in ornamental shrubs, trees, plants, vines, evergreens, etc., for beautifying the home grounds, freely illustrated with photographic reproductions. It will be a real pleasure to mail a copy of this useful book, fresh from the press of the great horticultural printing establishment of the J. Horace McFarland Company of Harrisburg, Pa. *Don't fail to send for this book.*

Mention Dept. A-1

Glen Brothers, Inc.

ESTABLISHED 1866 (56th Year)

Glenwood Nurseries **Rochester, N. Y.**

No connection either directly or indirectly with any other nursery concern in the United States

Kunderd's Marvelous Ruffled Gladioli

offer something entirely new and original for your garden. Far removed from the common sorts in size and coloring, their ruffled beauty will make your garden distinctive.

Our 1922 Catalogue

describes many new sorts introduced for the first time, and illustrates many of them (19 in colors). 52 pages of Gladioli descriptions and most complete cultural directions, including special instructions on how to grow show flowers. Send for a free copy of this most beautiful and instructive Gladiolus catalogue ever issued.

A. E. KUNDERD *The Originator of the "Ruffled Gladiolus"*

Box G, Goshen, Indiana, U. S. A.

Millions of Gladioli in this Field

The Garden MAGAZINE

Vol. XXXIV, No. 6 — February, 1922

Mattie Edwards Hewitt, Photo.

"WHAT PLANT WE IN THIS APPLE-TREE?
SWEETS FOR A HUNDRED FLOWERY SPRINGS
TO LOAD THE MAY-WIND'S RESTLESS WINGS,"
William Cullen Bryant

When an old orchard may be so converted to beauty, why should not a new one be set out with its pictorial possibilities definitely in mind? The Apple tree furnishes an ornamental pivot about which even a very small garden may spread its embroideries to advantage; the Pear, Plum, Peach, and Quince as well have been too long ignored in decorative plantings. Garden of Mrs. Egerton Winthrop at Syosset, L. I.

Mattie Edwards Hewitt, Photo.

The Camellia collection of Mr. W. R. Coe at Planting Fields, Oyster Bay, is unique in America. Reaching the height of their blooming season in February and March, appearing in fantastic combinations of red, white, and pink and in pure colors, the Camellias won favor in earlier days, but to-day are rarely seen. There are 68 varieties in this collection of 100 plants, gathered together in England by the late Robeson Sargent for Mr. Coe, and representing the best extant varieties of many hundreds grown at one time or another. The mottled red and white individual bloom shown here is the variety Kelvingtoni. (See also pages 296, 297)

J. Horace McFarland Co. Photo

"O SUDDEN URGING SWEETNESS IN THE AIR,
EXHALED, DIFFUSED ABOUT ME EVERYWHERE,
* * * VANISHED SUMMERS SIGH UPON YOUR BREATH."
Grace Hazard Conkling

"Where there's a will, there's a way" and, indeed, all sorts of ways are open nowadays to the lover of flowers who cherishes his miniature indoor garden not alone for its present delight but for its prophecies of spring

WHEN TO DO WHAT YOU WANT TO DO

The Month's Reminder

FEBRUARY—WELL BEGUN IS HALF DONE

Herein are listed the seasonal activities for the complete garden. Details of *how to do* each item may be found in the current or the back issues of THE GARDEN MAGAZINE—it is manifestly impossible to make each number of the magazine a complete manual of practice. References to back numbers may be looked up in the index to each completed volume (sent gratis on request); the Service Department will also be glad to cite references to any special topic if asked by mail and to send personal replies to specific questions; a stamped, addressed envelope being enclosed.

When referring to the time for out-door work of any sort New York City (latitude 40) at sea level in a *normal season* is taken as standard; but at best dates can only be approximate. Roughly, the season advances northward fifteen miles a day. Thus Albany, which is one hundred and fifty miles from New York, would be about ten days later, and Philadelphia, which is ninety miles southwest, about a week earlier. Also allow *four days* for each degree of *latitude*, for each five degrees of *longitude*, and for each four hundred feet of *altitude*.

(*Copyright, 1922, Doubleday, Page & Co.*)

OUTDOOR work at this time is confined to pruning and spraying and preparations for the first sign of spring. Any planning yet to be done may well be set aside for evenings, and stormy days. A walk around the place, notebook in hand, making a list of the things to be done ahead of time is advisable.

The new seed catalogues are now out, and as soon as selections are made send in the seed order; there is always congestion and delay in the final rush.

Mix up soil for sowing seeds now. If it be at all heavy, use plenty of leaf soil and some sand to make it porous. If very dry, give it water and then store away in large boxes or barrels ready for use when needed. Get flats ready; repair old ones; make new; wash old pots; order new supplies. Soak new pots in water before use. For sowing seeds impatient of transplanting use paper pots.

Complete repair and glazing of old sash as soon as possible, and give another coat of paint to any new sash soon to be used. Don't attempt to struggle along with too few sash. It is very convenient to have extra frames to accommodate the little seedlings from the hotbed.

Put sash on frames that have not been in use during winter so that the ground will get warmed up.

Making a Hotbed

As a hotbed is indispensable for an early garden, get manure for it as soon as possible. Turn a few times to allow the rank heat to escape. For a gentler and more prolonged heat add a few leaves.

With no equipment on hand a hotbed may be had this spring. Secure manure as early as possible, and as soon as it is actively heating, pack in a low pile two feet longer and wider than the actual size of the frame, and from two to three feet deep. When the frame is placed in position on this, bank up to the top with leaves and manure. Frozen lumps of soil put into the frame will soon thaw; or flats of soil, with the seed sown in them, may be set on top of the manure inside the frame. It is well to place a covering of soil over the manure in any case.

Planting must not be done until the heat (as shown by a thermometer plunged in the soil) has reached eighty or eighty-five degrees on the decline. Lettuce, Beets, Cabbage, Cauliflower, and Carrots interplanted with small-top Radishes may be sown during the month.

The hotbed thermometer is only one of several appliances that are real aids to early gardening. Protectors of various types used on cold nights permit planting outdoors one or two weeks earlier than would otherwise be safe and, used as forces during the day, will hurry up crops verging on maturity while others left to themselves are just breaking ground.

In the Greenhouse

With the lengthening days and increase of sun, plants are awakening to new life and it's time for a general spring scrub-down or clean-up. Proceed with annual re-potting of such foliage plants as Palms, Crotons, Pandanus, Marantas, etc.

Cut up clumps of Cannas preparatory to starting into growth, and dust sulphur over the cut surfaces.

Pelargoniums now in small pots will make by spring fine plants well covered with buds and flowers if potted into four inch size pots now.

Propagation of Crotons and similar foliage plants can be done in a close propagating frame with brisk bottom heat.

The bulbs of Calanthes to be rested after flowering in a dry place where the temperature does not go below 50°.

Give stock plants of Chrysanthemums a light position in a temperature of 48°. Take early cuttings.

Start Elephant Ears (Caladium esculentum) into growth in gentle heat.

Cinerarias require a cool temperature; 40° to 45° suits them best. Repot any plants that are pot bound to keep them growing, for the flowers require a setting of well-developed foliage.

Calceolarias for early spring flowering to have a position with northern exposure. They cannot stand direct sunlight, and are most impatient of heat, a temperature just above actual freezing suits them better than anything above 40°. On clear mornings spray lightly overhead.

Calla Lilies need frequent feeding to keep on producing first class blooms with long stems. Liquid cow manure is best and twice a week is not too often; the soil must not be dry when the liquid manure is applied or burning of the roots may result.

Keep Genistas cool in a temperature that does not greatly exceed 45°, giving plenty of water; liquid manure once a week.

With increased sun heat and longer days Orchids will show signs of active growth. Before the new growths of Cattleyas get too big is the best time to repot them, or give a top-dressing. Adequate drainage is an essential as is firm potting. Water with care at this time. Ventilation without cold drafts is important. As spring approaches a little shade is necessary.

Clumps of hardy Perennials lifted last fall and wintered in coldframes may be brought into a temperature of 45°.

Give Stevia stock plants a light place in a cool house.

Sowing Seed for the Flowers

Hardy Herbaceous Perennials sown now will make large plants by fall that will winter outdoors.

For cutting during April, May, and June sow Candytuft, Calendulas, Stocks, Sweet-peas, Cornflowers, Gladiolus, and African Daisies. Annual Larkspur sown now will flower at the end of May; early Asters in June. Sow Dahlias now; last year's roots set in the bench will soon throw up cuttings for propagating purposes. Sow Canterbury-bells to transplant when large enough and set out in May for flowering next season. Sow Cobaea scandens. Sow Pennisetum longistylum for edging semi-tropical beds, and, after potting off, grow cool.

Asparagus Sprengeri, Smilax, and Fibrous Begonias may still be sown.

Sow Annuals for spring planting to be followed by another sowing later.

Sow These Vegetables Now

Early Tomato will give strong plants for setting outdoors at the end of May.

Cucumbers, Melons, Tomatoes, Cauliflower, etc., for forcing indoors.

Cabbage, Lettuce, Beets, and Onions for later transplanting to coldframes.

Cuttings to be Made

Clean out old sand from the propagating bench, and start with a new supply; or saturate the old sand thoroughly with boiling-hot water before inserting cuttings.

Bouvardia root-cuttings to go into the propagating bench. Make the cuttings about an inch long; shade bench until top growth begins, then expose to full sunlight.

Select the best and sturdiest side growth from the Violets; they will root readily in bench used for propagating Carnations. When rooted, box up and set in a light position in the violet house until planted outdoors.

Put old plants of Lemon Verbena into a warm house to make growths which may be rooted readily in a warm propagating bench.

Take cuttings of double Petunias.

Stock plants of Salvias need temperature of 55-58° at night to produce material for cuttings; sow in a temperature of 50°.

Cuttings of Coleus, Achyranthes and all plants needed for bedding purposes to be propagated as material is available.

Flowers for Easter

April 16th, is Easter Day, and any bulbs wanted for that date should be brought in accordingly.

Shrubs intended for Easter holiday display should be in a temperature of 50°. Start Tuberous Begonias in a temperature of 55°.

Lilium formosum intended to be in flower for Easter should have the buds well set by the end of the month and will come in nicely in a temperature of 55°. Any that have not arrived at this stage of development may be hurried along with more heat.

Roses will take more water now and feeding may be done more liberally as growth is more active. With the sun heat and the fire heat, conditions are favorable to red spider. Don't allow too great a difference between the night and day temperatures. Don't allow the temperature at midday to reach 90° or more and then have it drop to 60° late in the afternoon. Keep up the temperature in the afternoon and maintain 60° throughout the night.

Catch Up in Supplies

This is the last chance to get fully caught up with or a little ahead of your work, and anything done now will be a wonderful help during the rush periods of the next two or three months. Make a list of the various things that apply to your work, and check off as attended to.

TREES DESTROYED BY ICE IN NEW ENGLAND

T. D. HATFIELD

NEVER has there been, I believe, a more devastating ice storm than that which swept along the New England coast in November. Most fortunately, the Arnold Arboretum, which was just on the edge of it, escaped; as did Boston and its immediate vicinity for about four miles inland. From the Litchfield Hills of Connecticut the storm raged northward along the coast as far as Springfield, Massachusetts. In the northern part of the state bordering New Hampshire its fury spent itself chiefly in snow.

At Wellesley we scarcely ate or slept from the time it started, Saturday afternoon, November 26th, until the following Tuesday afternoon when it commenced to abate. It was sickening to see great trees on the Hunnewell estate—the creation of a lifetime—so mutilated and destroyed; many of the older among them without sufficient vitality, I fear, to start anew.

The photograph here reproduced records a typical example of what happened during those devastating days. A number of other pictures were taken by way of recording the almost unbelievable destruction, the memory of which will not be effaced in our time. There is no indication, even among the oldest trees, of their having ever suffered to any similar extent.

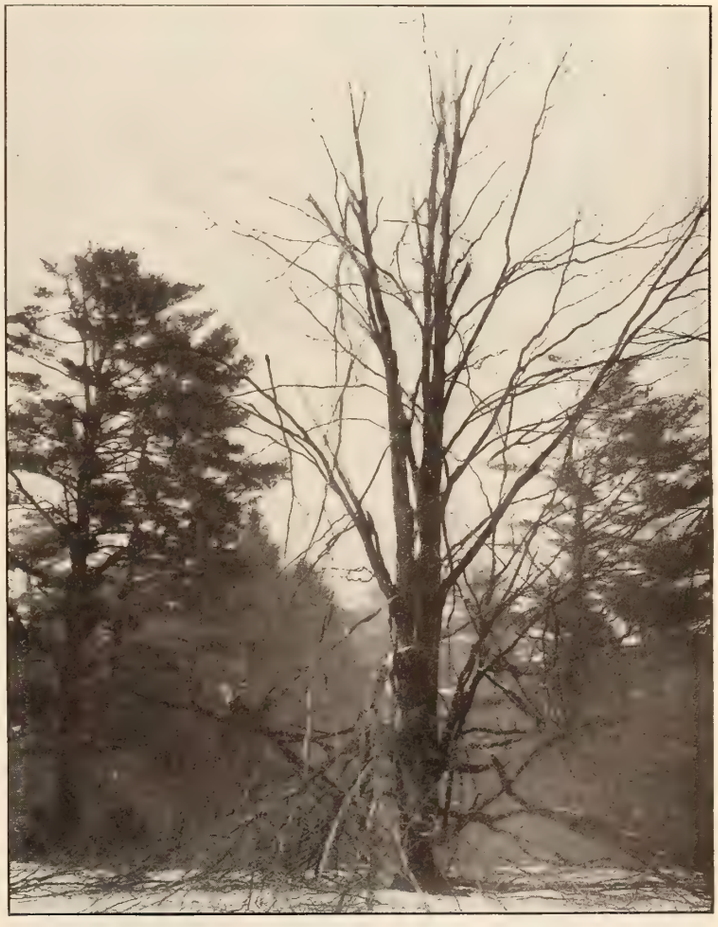
In previous ice storms with us at Wellesley, the Pines have usually suffered most; and indeed were the only trees that carried the effects through time as broken and sawn-off limbs testify. I have always wondered why Pines suffered most, as being native they might have been looked on as fitted to the climate, and it is likely enough that ice storms have occurred before. When Pines are cultivated in the open, as here, they develop a wide spread not possible in close woods and the open spread apparently renders them unable to carry the weight of snow. Up to this time no deciduous trees growing around here bore any evidence of suffering from previous ice storms; but this recent one broke up even tough-limbed Elms and Oaks, Black Oaks chiefly, with incredible ease.

The weight of ice gradually bore down the branches of Firs and Spruces, layer on layer freezing together till each resembled a closed umbrella. Rigid as columns they stood, the wind making no impression. So it was, to a lesser extent, with the Pines. Japan Cedars (Chamaecyparis) and other evergreens having several leaders, could not bear the strain and so sustained greater injury.

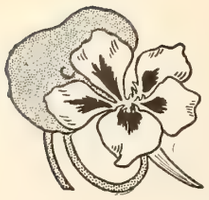
It has been stated that Japanese deciduous trees came through better than natives—a statement with which my observations here hardly coincide. The Japanese Golden Larch is a wreck; of the Pagoda tree (Sophora japonica) scarcely a stick remains, and the Ginkgo is almost as bad.

Among the Maples, the Norway stood up better than the Sugar; the Silver Maple was much injured. Walnuts, considered naturally tough, gave way. Our heavy-limbed Honey Locust and the Cucumber tree were only slightly hurt. Old Apple and Peach orchards were badly broken up, and hardly a deciduous tree in an exposed position escaped.

This saddening experience will not prove particularly helpful; one lesson the storm did teach us, however, and that is to keep trees away from buildings.



SUGAR MAPLE AT WELLESLEY, MASS., AFTER THE DESTRUCTIVE ICE STORM NOVEMBER 27TH AND 28TH, 1921



WHAT, WHY, and HOW MUCH among the ACCOMMODATING ANNUALS

ADOLPH KRUHM

Where Positive Results are the Goal it is Folly to Waste Energy on Uncertain Kinds

EDITORS' NOTE: An article dealing similarly with Table Vegetables appeared in the January issue.

TURN over the pages of the average flower seed catalogue! Two to six pages devoted to Asters alone—and all the varieties or strains are "free flowering," all are "fine for cutting," all "bloom for a long time!" And the same thing among Zinnias, Marigolds, Verbenas, etc., etc. It is hard for the ordinary man to assure himself that he knows how to unravel the tangle; yet the fact that many varieties in many classes are offered year after year would signify that there are differences among which choice must be exercised. Now it is really not difficult to make this choice among the manifold offerings if you approach your problem in terms of objectives. First of all, ask yourself: "What do I really want?"

Here's what you may have:

1. Flowers in Beds to Beautify the Home Grounds
2. Flowers for Cutting to Beautify the Indoors
3. Flowers that Grow Very Tall and Screen the House
4. Flowers that Climb and Provide Shade

For all these purposes there are accommodating Annuals available in many types and colors, in variety so bewildering as to discourage the beginner when trying to make out a seed order. But from my own experience I will try to chart a course through which any one may steer.

The term Annual as used here, designates a plant easily grown from seed to bloom within a few months.

SOME years ago it was my duty to sow annually from 500 to 1,000 distinct trials of Annuals and I recall the dread with which I sowed certain kinds because of their fickleness of germination, never knowing whether such and such rows would show up. Again there were seeds which would, I knew, sprout all right, but heaven alone knew whether they would ever survive the many ailments of their childhood and grow into plants big enough to bloom. None such will be mentioned here!

Finally, there were the other kinds which would grow and bloom, but whose flowering season was apt to be very uncertain. The plants might bloom before an early frost, or might not; they might bear one or a dozen flowers; the flowers might be single or they might be double. Those lessons I have never forgotten and GARDEN MAGAZINE readers are to get the benefit thereof.

Seeds for general use must sprout readily and strongly; plants must be sturdy and naturally healthy, free from liability to disease, and immune from insect attacks; above all they must bloom freely over a long period—as long as their nature and the conditions of the garden permit.

Flowers in an All-Season Border

IN A border 3 ft. wide and 50 ft. long there is space for a great variety of size, height, etc. You might grow, for example, tall flowers, like Celosias, Marigolds, or Zinnias, in the background; and, intermingled with them, some early Asters, Centaureas and Phloxes, while the entire border may be edged with either white Alyssum or the dwarf form of Ageratum.

Arranged in order of their relative heights, here is a selection suitable for the all-year Annual beds:

From 2 to 4 ft. tall, suitable for medium backgrounds: Balsams, Ostrich Plume, Celosias, African Marigolds, Cosmos, Helichrysum or Strawflower, Nicotiana affinis, and Zinnias.

All are valuable chiefly for their foliage effect, the plants forming dense, symmetrical masses. In the case of the Balsams, Cosmos, and Helichrysum, the foliage predominates early in the season. The Celosias, Marigolds, Nicotiana, and Zinnias also serve truly as flowers almost from the start; and, among the many Annuals available, none others will quite as well serve this purpose of providing foliage plus flowers at a certain height.

Yet while any one, or any combination of these will quickly produce effects, they are at their best only if combined with dwarfer kinds in the foreground, such as the following:

1-2 ft. tall suitable for individual borders (or in connection with taller or dwarfer kinds, for edging): Asters, early and late branching type, in many colors. Calliopsis Drummondi, for yellow mass effect. Centaurea Cyanus, for a true blue. Centaurea suaveolens, for soft lavenders and pinks. Larkspur, hyacinth-flowered, for a stately upright blue. Mirabilis, or Four o'Clock, for a lively show on sunny days. Phlox, for mass effects in pink and red. Pinks (Dianthus mirabilis), for grotesque shapes.

In front of such Annuals as these may be planted the real dwarfs to serve as edging for the entire border or for any bed:

FROM 6 TO 12 INCHES TALL. *White:* Alyssum Little Gem; Candytuft Empress; Petunia Snow Ball; Phlox Dwarf White; Vinca (Periwinkle) alba. *Blue and Purple:* Ageratum; Brachycome; Verbena; Petunia Giants of California. *Pink and Rose:* Petunia Rosy Morn; Portulaca; Phlox; Vinca rosea. *Red and Scarlet:* Dianthus Fireball; Phlox Fireball; Zinnia Dwarf Fireball; Verbena. *Yellow and Orange:* Eschscholtzia or California Poppy; Dimorphotheca or Golden Daisy; Marigold Dwarf French; Zinnia mexicana.

What to Grow for Cut Flowers

IF THE chief desire be a supply of attractive flowers for home decoration, there is wide opportunity for the sway of individual taste. Fondness for particular colors, for instance, may be gratified to any extent. But before specific color recommendations, let us consider the necessary factors that particularly fit an Annual for cut flower purposes.

First of all, the stem; a flower must be carried upright yet gracefully on a strong, stiff stem or it cannot be displayed advantageously. Secondly, color; a harmonious combination of colors must prevail, and the choice of colors in any one class must be wide enough to accommodate any desire within reason. Thirdly, it is desirable that the flowers be of pleasing shape and form. Fourthly, fragrance; although there is a distinct dearth of really fragrant Annuals suitable for cutting, yet, by careful selection, pleasant odors may be made to prevail.

The one Annual combining all desirable characteristics of a cut flower in the highest degree, the Sweet-pea, is curiously enough entirely unfit to be grown for any other purpose.

Because of the wide choice possible, the selection of specific varieties is left to the reader, who can pick colors to please his personal fancy. The most easily grown Annuals that meet the standard and provide flowers from early June until late fall are:

Antirrhinum	Centaurea suaveolens	Gaillardia	Salpiglossis
Aster	Cosmos	Gypsophila	Scabiosa
Calendula	Dianthus	Lupine	Sweet William
Calliopsis			Sunflower

The first to bloom are Calendula, Calliopsis and Centaurea, followed by Dianthus, Gaillardia and Gypsophila. The midsummer supply is provided by Asters, Lupines, Helianthus and Annual Sweet William; while Cosmos, Salpiglossis, Scabiosa and Snapdragon round out the season in the fall. Excepting the

Snapdragon, all these Annuals have coarse seeds that are as easily sown as Lettuce and of stronger germination than many grass seeds found in lawn mixtures. They will grow and bloom for anybody, in almost any soil.

When it Comes to Colors

YOUR every wish may be gratified among the Annuals so far as color is concerned. Please do not think me guilty of advocating "color schemes," which our friend Sherman Duffy, in a former issue of THE GARDEN MAGAZINE, called the "measles of gardening, because everybody gets them." The present effort is merely a desire to help the gardener to find the kind of flowers that will best serve individual taste.

White: Asters, all classes; Cosmos, early and late; Gypsophila elegans; Scabiosa Snowball; Sweet-pea (Spencer only); Zinnia Queen Victoria.

Aster and Sweet Alyssum will solve the problem of the most elemental garden for quantity of bloom and length of season

Pink: Snapdragon Daybreak; Asters, all classes; Centaurea (Sweet Sultan); Cosmos, early and late; Poppy Peony flowered; Verbena Mayflower.

Blue and Lavender: Aster Giant Branching; Stocks, Ten Weeks, Queen Alexandra; Nigella Miss Jekyll; Sweet-peas (Spencer); Scabiosa Azure Fairy; Centaurea cyanus (Cornflower).

Yellow and Orange: Calendula Orange King; Eschscholtzia Golden West; Gaillardia Lorenziana; Nasturtium (tall) Jupiter; Nasturtium (Dwarf) Golden Queen; Sunflower, Miniature, Stella.

Red and Scarlet: Aster American Beauty; Antirrhinum Coral Red; Dianthus Midnight; Scabiosa Cherry Red; Sweet-peas, Spencer vars; Zinnia Giant Double Red.

Annuals for Screens and Shade

QUITE frequently (and especially when moving into undeveloped sections) the necessity arises to screen some undesirable or ugly spot to shut out an unpleasant or dreary view or perhaps to secure a greater degree of privacy about some corner. For such emergencies there is a limited number of Annuals that will quickly (though only temporarily, it is true) provide effects that it would take years to materialize with permanent shrubs or trees.

That magnificent Annual Castor Oil Bean (Ricinus zanzibarensis) will form barriers 12 to 15 feet tall, developing trunks 3 to 4 inches in diameter, within the comparatively short time of 90 days, given deep rich soil and no root disturbance. Second only in effectiveness is the Mammoth Russian Sunflower, and the taller forms of the new double Helianthus. Hollyhocks, though really Biennials, deserve mention here. For best effect a row of Cosmos may be planted in connection with both Hollyhocks and Sunflowers, since these two are apt to drop their lower leaves late in the season.

One must have lived in the treeless plains of the great Southwest to fully appreciate the words "comforting shade." For combating the merciless rays of a midsummer sun (and you do not have to go West to find them), even the ordinary Fire or Scarlet Runner Bean proves a welcome aid, and be it further said in its favor that few vines provide a denser shade.

There are vines with much daintier foliage as well as more impressive flowers. But in exact ratio as the foliage becomes dainty, shade diminishes and if you grow more plants to the foot the strength of the vines will suffer unless the soil is extremely rich. Thus works the law of compensation along climbers: what you gain in foliage you lose in flowers.

Here are, however, eight Annuals quite dependable for shading porches, for decorating arbors, or to hide trellises — kinds that will grow thriftily almost anywhere and in any soil:

Balloon Vine	Cypress Vine	Brazilian Morning Glory
Canary Bird Flower	Dolichos	Japanese Hop
Cardinal Climber	Moonflower, Japanese	

If Your Garden Is Small

FREQUENTLY the opportunity for flower gardening in suburban areas is decidedly limited. Yet it is surprising what quantities of flowers can be grown on a hundred

square feet. With space limitations in mind, what really are the logical flowers? With room for but one flower, which will give the greatest returns? Arbitrarily I might say that the humble Nasturtium is the most satisfactory flower to grow in the small garden, under all circumstances, on all soils, and in all localities. And the sales' records of America's big seed houses confirm this, since more Nasturtium seeds are sold every year than seeds of all other flowers combined, Sweet-peas excepted. One big seed house alone disposes of 25,000 pounds a year in its retail trade, while the sales of the entire trade total nearly 300,000 pounds per year. In terms of home gardens, this provides one ounce of seeds (the average quantity bought) for nearly five million planters!

As a second "small garden" flower consider the quite different Marigold (Tagetes) which is rather ornamental as a specimen plant in the garden besides furnishing an abundance of bloom for cutting. Both a tall (African) type and a dwarf (French) type are available, and please those who want an effective combination in yellows, orange, and deep brown. The dwarf Pot Marigold (Calendula) is a different plant, but harmonizes well with the others. The Legion of Honor is a small variety of the French type and presents a unique mixture of gold-and-brown flowers on a compact dome-like bush.

Only one other flower affords as striking possibilities and that is Salvia. "Horrible," I hear some people say, and I agree! But the fact remains that Salvia splendens predominates as a scarlet flower in rural and surbuban gardens. It has decided qualities and is certainly popular. There are several variations of shade offered, including one violet.

Two more flowers of particular merit for the small flower patch are the dear, old-fashioned Four o'Clock (Mirabilis) and Sweet Alyssum. Both do particularly well in sunny situations, striving to outbloom each other throughout the season. Alyssum self-sows constantly, and the new seedlings bloom before the mother plants have sent flowers to the end of the trusses. Thus a Sweet Alyssum bed spreads fragrance and cheer from early in the spring until frost finally nips the last young seedlings.

For Biggest Effect in the Small Garden

YOU can hardly hope to provide an all season show unless you use a diversity of kinds and varieties, although some charming effects may be created in small space by the use of different varieties of but one class of flowers. I have in mind a bed, about 5 x 20 ft. which, some three years ago, I planted with naught but Asters. True, there were no flowers before early August, but from that time on until October we enjoyed an uninterrupted show. Queen of the Market was chosen from among the Dwarf Asters as a border. The centre was given to both early and late Branching Asters, in conjunction with that very fine variety American Beauty.

Many a gardener has turned to the Petunia as the solution of the one flower problem, and for persistent bloom anywhere and everywhere on wet or dry soil it is unsurpassed. It blooms anyhow in sun, but the quality of flower is directly proportionate to the fertility of the soil.

Of the two courses open, namely planting quite a variety of flowers within the limited space and having these flowers serve many purposes, or pinning faith to one kind and being satisfied with one brilliant effect during part of the season, I believe the latter holds the best opportunities.

The Ever-Present Problem of Quantity

AMONG flower seeds, in many instances, the ounce is considered a wholesale quantity. The question, therefore, of how many flower seeds to order for the home garden is not quite so easily answered as for vegetable seeds. Generally the price question is a pretty good index of what you may expect by way of quantity in a packet. Most catalogues price flower seeds in packets, in fractions of ounces, and by the ounce. Where for instance, a quarter of an ounce is listed as 25 cents and the packet of the same variety costs 10 cents, it is a safe thing to assume that that packet will contain from $\frac{1}{3}$ to $\frac{1}{5}$ of one quarter of an ounce. In other words, a 10 cent packet of any kind of flower seeds valued at 25 cents for one quarter of an ounce usually contains from one tenth to one twentieth of an ounce. Ordinarily such a packet will sow a row 10 to 15 ft. long, depending entirely upon how carefully the sowing is done. In the case of coarse seeds such as Marigolds, Zinnias, Cosmos, Nasturtium, Sweet-peas, as well as Scarlet Runner and Dolichos among the climbers, it is economical to buy by the ounce. But do not let the question of price per packet or per ounce be the governing factor in your decision as to which quantity to buy nor even where to buy.

Rigid selection to an ideal involves a lot of labor on the part of a grower, and labor costs money; and again all kinds of flowers are not equally constant in coming true or, as it is expressed, in remaining "fixed." With some plants the tendency to reversion is particularly strong and seeds of a double strain, for instance, may not always give 100 per cent. doubles and will vary downward to even as low as 25 per cent. according to the rigidity of the selection for several generations back and the inherent instability of the particular kind of flower. In such "unfixed" types the risk of 100 per cent. disappointment naturally increases with the decrease of the quantity of seed sown; therefore, of any such, sow in excess of requirements for a safe margin. Here are two recent personal experiences to illustrate.

Two years ago I secured several packets of Double Cosmos, paying 25 cents per packet to a house of fine repute. Although told that I must expect a reasonable percentage of single flowers, I was both amazed and delighted to see that nearly 50 per cent. did come double. During the season just past I saw Double Cosmos offered by another reliable house at 10 cents per packet and bought some. To my disgust this strain gave me but five plants with double flowers out of one hundred. And worse still the single flowers of this "double strain" were inferior to any other single Cosmos, either early or late flowering, that I have ever grown!

Now the other case: I grow Celosia Thompsoni magnifica to mark paths or to define borders. Any well selected strain of this will produce very handsome symmetrical bushes two to three feet tall with a spread of perhaps two feet, in scarlet, ruby red, and yellow from early August until frost. Failing to order seed of this early in the season, an emergency purchase was made at the corner store. Imagine my feelings when by the middle of August these Celosia plants had become rank weeds—most of them over five feet tall with a spread of three to five feet and flowers not far removed from the common Amaranthus—completely blocking the paths. They were finally ejected in mid September after a heavy storm had blown them over in all directions.

Here is a standard of quantities that will be practical for a flower garden consisting of four borders, three by fifty feet:

Kinds Where Packets Hold Enough: Celosia, Helichrysum, Nicotiana, Aster, Calliopsis, Centaurea, Larkspur, Pinks, Brachycome, Ageratum, Petunia, Portulaca, Dimorphotheca, Antirrhinum, Gypsophila, Calliopsis, Gaillardia, Salpiglossis, Scabiosa, Sweet William, Salvia, Nigella.

Kinds of Which Ounce Fractions Serve Best: Balsam, Marigold, Cosmos, Zinnia, Mignonette, Mirabilis, Phlox, Candytuft, Alyssum, Calendula, Eschscholtzia, Verbena, Ricinus, Sunflower, Nasturtium, Lupine, Hollyhock, Sweet-pea, all Climbers.

Words of Warning and Hints of Permanency

MANY flower gardens are killed by kindness. All the Annuals dealt with in this article thrive like weeds after once becoming established. The ever present temptation is to "fuss" about them. Being for the greatest part shallow-rooting plants, Annuals dislike being pushed or pulled about. When gathering flowers, *cut* the stems.

Do not get the soil too rich! The average "good garden soil"

is rich enough for most flowers. Nasturtiums and all other flowers growing much foliage actually bloom better on a somewhat poor soil.

With few exceptions like Alyssum, Phlox, Poppies, etc., the sowing of most flower seeds had best be deferred until the middle of May when the soil has become reasonably warm. Sow and forget you did it for a month. If gaps are then apparent, re-sow at once.

At best, the garden of Annuals is but a temporary expedient; for permanency dependance must be put upon the hardy Perennial. The fascination of starting with seeds is great, and where the element of time does not count and space permits, by all means start a seedling bed of Perennials to care for the future.

For that Shady Nook

FOR the shady nook where seemingly it is impossible to get anything to grow, the accommodating Annual, in Forget-me-not (Myosotis), is ready to thrive lustily if the ground be moist. Mignonette, too, will do well in a moist shady spot, but is so exacting in its moisture requirements that it cannot be grown successfully in the average garden. For that reason it was not included among the relatively few fragrant Annuals suitable for cutting. This is true also of the Fragrant Tobacco.

GROWING SWEET-PEAS

A. W. ROE

The Annual for the Million Combining in the Highest Degree Quality of Stem, Harmonious Color, Variety of Shades, Grace of Form, and Fragrance

MODERN improvements in this fragrant, vari-colored, graceful flower are so great that it has achieved a place as a universal favorite among summer annuals. Nearly every color can be had and numerous crossings have produced some striking and beautiful combinations of hues and mottlings fit to harmonize with any scheme of interior decoration. Many people like to wear Sweet-peas, and as an ornamental touch to the yard or lawn, nothing excels.

To be successful with Sweet-peas, the first thing required is to see that the plants have a chance to secure a deep root system. If the ground was cleared and prepared the fall before planting so much the better—but anyway select a sunny location, not near any large trees or shrubbery, and dig a trench 12 inches across, 24 inches deep, and as long as desired. In digging the trench, keep the top soil and the bottom soil separate. Mix equal parts of well rotted stable manure with the lighter soil from the bottom of the trench and place this mixture in the trench, filling it to within 12 inches of the surface of the ground. Next, mix a little of the manure with the top soil and fill the trench with this to the surface of the ground. As suggested, the trench should be made and filled in the fall, but it may be done as late as February if the condition of the ground will permit.

SOW the seed in the latter part of February or the first of March. It is only through early sowing that the plants will have time to develop a strong root system before hot weather. If they have not done so before the warm days set in, the vines will soon sicken and die.

Seed may be soaked in water for about 24 hours just before being placed in the ground. Many of the varieties have a tough outside covering; this will be softened by the water, thus allowing the plumule to make its exit more easily. Some expert growers advise the sulphuric acid treatment of the seed.

Select a time when the ground is fairly free from water and take out four inches of the top soil of the trench. Then make two trenches, six inches apart down the main trench, allowing the seeds to be planted in a double row. Let these trenches be 3 inches deep and place the seeds from two to three inches apart in them. It is better to plant them a little thick to be sure of a good stand. Notice that the surface of the trench is now four inches below the surface of the main soil, even after the seeds have been covered and the soil well packed on them.

As the Peas appear above ground and grow, fill in soil about them until the trench has been completely filled. This method of planting will give them a deeper rootage than is possible if they are planted flush with the surface of the ground. It is absolutely necessary that water be not allowed to stand in the trench after the seeds have been planted. If it is inclined to do this, dig a trench at one end of the main trench, deeper than the Peas are planted, to conduct the water away. Too much water will sour the soil and scald the young vines.

BRUSH makes good supports for the Pea vines to cling to, but is not always easy to secure. Perhaps the next best thing is small-meshed net fence wire. I have seen a trellis made in the manner to be described that gave the vines excellent support and was at the same time ornamental.

At each end of the trench, set a wooden post so that it will be five feet above the ground. You may not be successful in growing vines to that height but it is well to prepare for the taller vines; you might have them. Near the ground and at each end, nail a cross piece. These pieces are six inches long and to them are nailed side slats. There is also a slat nailed to the tops of the stakes. Next, procure ordinary wrapping cord and run it from the bottom slat to the top one, back and forth, crossing it and tying so as to form a mesh fine enough for the small tendrils to catch to in their upward climb.

The main thing in growing fine Sweet-peas is to plant them early and deep so that they will secure a firm root system. Continue to pull soil up to them at intervals during the spring months. Work the soil with a short gardener's fork, very lightly, but do not allow it to pack or bake about the plants.

When the blossoms appear, they must be picked off carefully just as soon as they are fully open. If the vines are allowed to make seed, growth ceases, and there is little further bloom, for the whole object of the plant's growth—seed forming—has been achieved.

CAMELLIA HOUSE AT PLANTING FIELDS, OYSTER BAY, N. Y.

In a house specially designed to ensure cool conditions in summer time Mr. Coe successfully cultivates a unique collection of about 100 plants representing about 30 selected varieties of this now neglected, gorgeous, and difficult flower

(See also page 290)

RECONSIDERING THE CAMELLIA

LEONARD BARRON

An Old-time Almost Discarded Favorite that Finds a New Champion for its Austere Captivating Beauty in Garden and Greenhouse

MANY a visitor to the New York Flower Show last March experienced a new sensation when viewing the display of Camellias made by Mr. W. R. Coe; for many another the vision reconstructed memories of an almost forgotten past.

A hundred years ago the gardens and greenhouses of America treasured collections of Camellias. That was a hundred years after the introduction of the plant to European cultivation, during which time it had climbed into the front rank of popularity.

In those days flowers used for bouquet work and so forth were handled with a stiffness that is quite unknown among the floral artists of to-day; everything was wired. Before starting to compose an arrangement of flowers the blooms were frequently deprived of their natural stems, wire supports being substituted.

The Camellia lent itself admirably to this treatment, and was perhaps largely accountable for it, since the flower is produced without any appreciable stalk, is usually clustered tightly down among the leaves and, when cut, with a short twig or branch not lending itself easily to decorative work. But the flower itself made up for all deficiencies in the habit of growth of the plant. Red, pink, or white and with the most fantastic stripings, blotchings, and marblings, it glowed and endured when more transitory flowers of perhaps even greater intrinsic appeal would fade. The petals of the Camellia are very thick, leathery, and although quickly discoloring if bruised will otherwise remain in condition for a week, easily.

But fashions change, and fancy shifted from the magnificent stiffness of the Camellia flower to others more plastic and perhaps easier to grow. In the period of its heyday every private establishment of any pretense had its Camellia house. Many of them were converted orangeries. Coming from China and Japan in a great variety of bizarre colorings, hardly any two alike, these plants stimulated a great rivalry between well-to-do amateurs for the possession of the most modern, fantastic, and diversified collections. If seeds were sown, more varieties appeared; for the Camellia is one of those immensely variable plants like the Dahlia and Chrysanthemum, the present day representative of what has evidently been a cultivated favorite in the Orient from very ancient times. All the hundreds of catalogued varieties are evidently seedling variations and sports of just one species, and not the products of hybrid ancestry.

Its former popularity was so great that it has a comparatively elaborate literature and, in particular, whole albums of colored portraits of its multitudinous varieties; one work of several published in France around 1850 having nearly 600 such illustrations in full color. In one of these books bearing date of 1843 and published in Paris ("Iconographie du Genre Camellia" by L'Abbé Berlese) we find evidence of an expanding interest in this flower that then existed in America.

"For the last twenty years," says the author, "Americans have been interested in the culture of the Camellia;" the most important collections of which were to be found in the neighborhoods of New York, Philadelphia, and Boston, where, he goes on to say, "the most prominent society leaders have taken up Camellia culture with an 'incredible persistence,'" so great indeed was the interest attributed to American professional and amateur cultivators at that time; and he finishes the reference by a tribute of thanks for their interest in the cultivation and introduction of this plant to Messrs. Floy, Harrison, Smith, Buist, Wilder, Sherwood, Landreth, and Dunlap—names which evoke many memories among all who have followed the early history of gardening in America.

HOW different to-day!—in place of many collections there stands only one, and that an entirely modern collection, gathered together within the last few years by Mr. W. R. Coe of Oyster Bay, Long Island. There are reasons for the slackening of interest in Camellia growing; for one thing, it is not an easy plant to grow in that part of the Northeastern United States where plant collection is chiefly centred. It does not take kindly to hot, dry summer weather and needs special accommodations to mitigate the intensity of the heat. The

ideal temperature is around about sixty degrees in summer time, with shade; and the winter temperature of thirty-five to forty. Heat is more likely to be injurious than cold.

As a pot plant for interior decoration where it can be kept properly cool there is hardly anything to equal, much less surpass, the Camellia in regal, if albeit frigid splendor, with its dense mass of thick, glossy, intensely dark green foliage studded with gorgeous flowers simulating Roses or Peonies, four to six inches across. The plant is a slow grower, although it responds to careful cultivation and feeding.

The blooming season begins with the winter and continues until early spring, the maximum production being about February. Going to the South, Camellias can be established outdoors. It takes kindly to the sandy soils of Florida, and on the Pacific Coast it grows with a vigor that bids fair to justify its re-establishment in an esteem equalling that which it enjoyed in the East a century ago. At Portland, Oregon, plants outdoors in the trying winter of 1919–1920 withstood a temperature of six degrees below zero in December.

THE COMPELLING CAMELLIA

In white, pink, shades of red, and odd blends of all; barbaric or fragilely delicate the Camellia attracts wherever seen by reason of its size and brilliance. (Actual size bloom)

MR. COE'S collection, growing in a house specially constructed with side ventilation and top shading for the purpose of maintaining the necessary coolness in summer, comprises something more than a hundred plants. The house is approximately 100 x 50 ft. with an ornamental pool arranged in the centre. The house itself is something more decorative and ornamental than the conventional plant house and the interior arrangement was carried out by Mr. Dawson of Olmsted Bros., landscape architects. Some of the specimens are in tubs and others planted out. It is fortunate indeed that Mr. Coe had the inspiration to make this collection before the imposition of the restrictive Quarantine Order No. 37, as it is now quite impossible for an enterprising plant amateur to build up a collection of this character by importation since the plants cannot possibly be handled without soil. A few varieties are to be had here, however.

Large sized, old-time plants are to be met with occasionally in some of the older gardens of the South, and it is said that some of the original introductions to America are still growing at Middleton Place, near Charleston, S. C., where they were sent by Micheaux, whose memory is associated with the discovery of the unique specimen of Gordonia altamaha on the banks of the Altamaha River in Georgia.

The Camellia is related to the Gordonia, and very closely indeed to the plant which supplies us the tea of commerce, and was at one time known as Thea japonica. An affiliated plant usually grown among the Camellias as Camellia reticulata, with larger flowers than the japonica varieties and leaves less glossy, is now recognized under the name of Tutcheria spectabilis. Its larger, attractive, rose-colored flower with undulate petals is even more effective than the true Camellia which was named in honor of Kamellus, a Moravian monk, which should be a reminder that the pronunciation of the name is not as though commemorating Camille.

WHY DO PEOPLE PAINT FLOWERS?

FRANK GALSWORTHY

(One of whose paintings is reproduced on this month's cover)

EDITORS' NOTE: Flowers have meaning for Mr. Galsworthy; he respects them as individuals and takes pains to present them as such—Larkspur to him is not just any old Larkspur, it is Delphinium belladonna, Moerheimei, or chinense, as the case may be, with graces and perhaps defects quite distinctively its own which differentiate it from all other flowers and mark it as a definite personality. Mr. Galsworthy is fortunate too in being unimpeded by theories of technique and is quite simply in clear-eyed fashion seeking to see the truth, and to convey it. Hence his strong appeal to gardeners who are, first of all, growers and lovers of plants and—in the main—only secondarily critics and lovers of art.

It seems a special bit of luck to get this candid personal statement of Mr. Galsworthy's views and convictions on flower painting and at the same time be able to present "the proof of the pudding," as it were, in the characteristic example of his work appearing on the cover of this issue. Among these friendly blooms our readers will recognize with pleasure a number of oldentime garden favorites and possibly some newer ones as well—the Double Poppies in particular seem worth remembering when plans for spring sowing are being made. As a matter of fact there are among the Peony-flowered and Carnation-flowered types of Poppy many rather lovely shapes and shades not ordinarily found in our gardens which really merit a place.

THERE are many reasons why people turn their hand to flower painting, and they do so with varied objects in view. The results are frequently so unsatisfactory that perhaps a few remarks on this subject will not be uninteresting and may even prove instructive to those who are not hidebound in their outlook upon the matter.

It may be that a person thinks the subject an easy one for producing something to hang on the walls of the home, another may paint in order to perpetuate in the mind a flower which has interested him, and a few may do so because they cannot resist the desire to thus express their admiration for the wondrous beauty which nature and horticulture bestow upon all who choose to open their eyes and minds.

There is one thing absolutely certain! It is a harmless occupation and annoys no one—unless perhaps it be the artist when he has a real failure. Unlike the practising of various musical instruments which everyone must at some time or another have suffered from—excruciating squeaks on a beginner's fiddle, shrill sounds from an untrained voice or even a trained one at times—and unlike the irritating repetition of a passage exercising the fingers, an artist can at any rate annoy nobody but himself!

Putting aside the early efforts of youth whose ambition may be to paint pretty Christmas and birthday cards and the slap-dash style of work which tries to get an effect without the use of thought, study, or brains, there are two or three methods of flower painting which are constantly to be met with.

The expert decorative designer has a sense of form and color, so his work is of interest and of beauty when well carried out and in its proper place. In using flower subjects for this purpose it is not desirable to endeavor to obtain an exact representation of nature; but an adaptation of form and color with a creative faculty will achieve delightful results, and is to be commended and encouraged.

The desire to beautify the home and to be surrounded by the memory of ephemeral blossoms of summer days is surely adding to the joy of life in a world all too full of humdrum dullness.

A design can be made from a flower and satisfactorily serve its purpose of conventional decoration though it may only express the slightest resemblance to the object from which it is drawn.

An exactness and truth to nature is, however, absolutely necessary for those who wish to illustrate books dealing with botanical subjects, and no drawing can be too fine or too careful with this object in view.

TO MY thinking a flower painter should do more than decorate and illustrate. He should combine true likeness with creative purpose. A decorative design will not satisfy an artist who is a gardener or who has some knowledge of plants, of the growing of plants, and their radiant beauty—for he who tends the growth of a garden sees so much more than one who has no such occupation to enlighten him. His pictures therefore express so much more than one who uses flowers only as bright splashes of color.

When one paints for the love of painting, for the love of the object to be represented, it is surely a higher and more satisfactory reason than any other. It is then that an artist shows his true capacity and becomes a creator as well as a recorder of beauty. For sheer love of the thing he studies his subject and in doing so discovers beauties never before noticed or suspected.

A flower is a living thing, no mere piece of pottery, drapery, or furniture; it is a growth of cells reflecting prismatic colors ever scintillating with life and should therefore be treated with the studious respect due to its subtle charm.

At the commencement of flower painting it is essential to learn to draw—this cannot be skimped! When once mastered, skill in drawing will become so easy that little, if any, pencil work will be needed, just the faintest outline sometimes; then the shadows which cannot be indicated in pencil and which must depend upon the draughtmanship of the brush can be executed with facility.

Before starting a picture it is necessary to ponder well and to be sure of the effect desired, and when once you have made up your mind the original intention should never be lost sight of. As the work proceeds one is liable to become confused and so lose the general effect of a picture. Then boldness is necessary; no hesitation when once you have determined what you want the completed painting to look like.

In using the medium of water color, no alteration or very little is possible, for, unlike oil and tempera painting, a clean transparency for flower petals is needed and this is one of the chief charms of the use of water color. If sufficient boldness is used it should not be necessary to enhance the original wash of color and it should be borne in mind that a tint when dry is lighter than when first put on.

OF COURSE, much of this applies to all painting, but I emphasize it here because so often flowers are not treated seriously as beautiful living things worthy of an artist's best study and his best work. If you don't feel a positive elation and joy when looking at a flower you will never do it the justice in your picture that it deserves, and your talent should be used to portray a different subject.

Some modern flower painting is curiously lacking in beauty or interest and has little decorative effect. A conglomeration of splashes of color deliberately put in to look like nothing on earth may mean one of two things. First the "Artist" may desire you to turn from an excess of beauty to unaccustomed hideousness, he may think that the creation of ugliness is a sort of necessary medicine for the mind, a swing of the pendulum to the other side, and he may feel a call to stimulate the taste by such means. I hold that it is impossible for a person who has studied nature in an admiring spirit to be over satiated with its beauty, you might as well say that if you are tired of the scent of roses, you should take a walk round the gas works for recreation!

Secondly—and I think this is frequently the case—the "Artist" cannot draw and will not take the trouble to learn, so he puts on canvas something so completely original that it will draw attention to himself by "hook or by crook"—unworthy object!

Many of these latter pictures have we all seen, devoid of skill, thought, or study and they are often pronounced to be "extraôrdinary," "clever," "wonderful!" Extraordinary they may be, clever they certainly are not, and wonderful they certainly are, but to my thinking the wonder is that any one has the effrontery to paint them. However, as I said before, it's a harmless occupation and nobody need looks at a thing not liked.

PRESUMING the desire is sufficiently great, the study earnest, and the admiration of flower-beauty sincere and deep, I think there should be no curb to the imagination in creating pictures drawn from nature and arranged in harmonious color and form. The mixture of flowers in contrasting tints or in harmonies—brilliant contrast or delicate harmony—is endless, so that each of us can select what the mood or the subject to be depicted inspires.

Moreover, I maintain that all colors are beautiful—even the much maligned magenta for which I personally have a great admiration. I have heard folks say that they think it "hideous" or that they wish it "could be abolished from the face of the earth." Everybody to his taste—but there are degrees of taste, and I have known many who disliking this color at first have after a little demonstration and observation not only admitted that it is "not so bad" but actually have come to like and admire it.

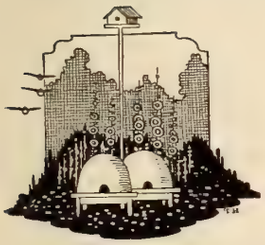
Frequently will a person express a dislike to a color in a certain place and admire exactly the same tint when seen elsewhere. Put a real, bright magenta flower with two or three shades of purple and it is at once at home and harmonious. Put it with vermilion and orange, some contrasting bright blue, and some dark violet or bronze as a firm note—surely no one should say it is out of place or ugly in such an environment.

If only there is sufficient boldness in mixing colors together without stint, it is surprising how effective and satisfactory an arrangement of flowers can be, and how interesting!

A bowl of pink roses in the centre of a table is a bowl of pink roses and little else, but a good arrangement of different colored roses or of many different colored flowers may be and generally is a source of perpetual interest and beauty from the moment it is set out until the flowers are dead.

When I say there need be no curb to the imagination, I say it rather in self defence as well as for the consideration of those interested in these ideas—self defence because it has been mildly suggested to me that certain flower pictures I have painted are "impossible." This is because I have depicted together a number of flowers which could not possibly be in bloom at the same time. Botanists do not like this, it worries them a bit! With confidence I say this is a narrow point of view. A picture containing every kind of flower that comes to the mind during its making is an imaginative work, a vision of past loveliness, a record and mirror of beauty that dwells in the memory. When autumn flowers are flourishing gaily we do not forget the early Primroses or the sweetness of summer's joys! My botanical friends might as well take exception to pictures of sacred figures sitting on clouds—an obvious impossibility—and surrounded by little angel heads having no bodies nor limbs. The greatest masters have painted such and they are decorative pictures born of the imagination and in no way representative of real life. Why, therefore, should this not be permissible when painting flowers? Why not conceive beautiful impossibilities?

Three things are needed—continuous and patient study, bold experiment, an unrestricted fancy. These will surely lead to the creation of flower pictures that at once decorate and beautify, that resemble nature and appeal to all who interpret her in the right spirit.



SPEAKING OF GARDENS

FLORENCE BOYCE DAVIS

SPEAKING of gardens, I heard a man say yesterday:
"I never plant a garden: what's the need? My neighbor
Has more than he can use, and always tells me,
'Help yourself; the stuff is going to waste;
You're welcome to it while it lasts.' And so
I fare as well as he; better, in fact,
Since he does all the work and I do none."

THUS he talked about it, braggart wise.
I wondered would he ever learn to read
The secret message of the spade and hoe,
Or come to know
How like an open sesame they lead
To hidden treasure that no man may hold
Save he who delves for it beneath the mould.

AND so I said: "Friend, never till you sit
Beside your winter fire and plan your garden out,
Seed catalog in hand, and in your mind
A blue print of each bed and hill and row—
Until in spring you take your trusty hoe
And level off the earth, and mark it out,
And sort the little envelopes that hold
Seeds, big and little, pointed, flat and round,
And tap them so, and hold them to the light
And reckon if one packet is enough—
Never till you see the first green tint
Of round leaves in the radish row, or mark
The crooked necks of peas come pushing up,
The red leaves of the beets, and all the rest—
Never till at early dawn you bend
Culling out weeds that spring up after showers,
While a song sparrow sings upon the fence,
And bobolinks are heralding the day—
Never, I say, till then can you esteem
A garden at its proper worth, or reap
One half the harvest that it yields; for ripened fruit
A flavor gives to him who grows the vine
Which he who trains it not can never know."

THAT ELUSIVE ELEMENT OF BEAUTY IN THE ROCK GARDEN

CLARENCE FOWLER A. S. L. A.

Placing the Rock Garden where it Properly Belongs—Screening for Seclusion and Surprise—Materials and Manner of Making

A ROCK garden can be a charming spot but often is a grotesque collection of stones and plants, inappropriately placed with no reason whatever for being, except to add another unpleasant feature to the grounds of the person who tells you she "loves naturalistic gardens." To show her appreciation of nature she has piled a heap of stones and earth in the middle of a smooth, clipped lawn and planted it with tall pink Phlox, yellow Nasturtiums, and perhaps a few red Begonias, and an Ivy from the tomb of Washington. To complete this picture of sylvan loveliness, walks bordered with magenta Petunia and red Salvia have been allowed to wander at will about a level lawn. A golden Arborvitæ or blue Retinispora squarrosa giving reason for an extra twist in the meandering, under the impression that any line that is not straight is natural and all colors in nature are beautiful however arranged.

Fortunately "rock" gardens of this sort, with their inappropriate settings, are disappearing through the influence of the garden clubs and horticultural magazines, which are beginning to turn their attention to garden design as well as the culture of plants.

I do not like the term "naturalistic" as often applied to rock gardens. The best examples are undoubtedly inspired by natural scenery, but it is impossible with the necessary walks, rough steps, and plants gathered from the four corners of the earth for the final result not to show the hand of man and take a more or less gardenesque character. This is not an objection; my only quarrel is with the term, which is deceptive and apt to lead astray the thoughtless by introducing features that might well be omitted.

Neither would I call all rock gardens "alpine" as there are many plants usually grown in a garden that do equally well under the more naturalistic treatment and, if neglected, do not look as unkempt as in a formal planting. I always think of the alpine garden as a collection of plants most of which will not grow under ordinary garden conditions. This limits the designer in his material if he is building for scenic effect, rather than a place for growing a collection of plants.

H. G. Healy, Photo.

ROCK-WORK SKILFULLY HANDLED IN NATURE'S OWN MANNER

The naturally rocky character of Westchester County makes an ideal setting and renders any sort of rock-work, if cleverly introduced as here, completely devoid of the artificiality which too often mars it. Garden of Irvin S. Cobb, Ossining, New York; designed by Clarence Fowler, A. S. L. A.

The Proper Kind of Place

AN IDEAL location for a rock garden is a hillside with outcropping natural rock where there are both trees and open spaces. The rock plants must have plenty of sunshine which, someone has said, is the life and soul of a garden of flowers. The paths should follow the natural contours and the addition of a shrub or bold projecting rock to break the view is effective.

Different levels should be taken advantage of wherever possible by flights of rough steps to accentuate the height; the addition of a few low steps on practically even ground will often give the appearance of rising several feet. If water can be introduced, the picture is still more pleasing. A natural spring is a bonanza and by a little careful planning can often be carried to different levels with intercepting waterfalls and pools. Many a hillside has been made into a sunbaked lawn when at the same, or even less, expense it could have been developed as a rock or a wild garden.

The large open spaces might be planted with ground covers, many of which grow wild, and by a little clipping and weeding are even more attractive than in their native habitats. For the shady places under the trees and large shrubs, such ground covers as Ferns and the Japanese Spurge (Pachysandra terminalis) grow most luxuriantly. The Gout-weed (Aegopodium Podagraria) a European escape, is most attractive where there is plenty of room and no danger of crowding out its neighbors.

F. A. Walter, Photo.

WHERE LOWLY LITTLE PLANTS MAY DISPLAY THEIR BEAUTY

The gray, unyielding surface of great stones serves to accentuate the brilliant, airy beauty of many a flower which finds itself lost among a crowd of more showy competitors in the ordinary garden. (Mrs. Chanler's garden, Tuxedo Park, N. Y.)

I know a place in Westchester where it forms a close green mass of leaves eight or ten inches high under the dense shade of Pines, the light green making a pleasing contrast to the dark green needles of the trees above. The variety variegatum is equally rampant in its growth, but (like all variegated and colored foliage) is more difficult to combine with other plants than the natural form.

If one is not fortunate enough to own a rocky hillside and wishes a more naturalistic setting than a border planting, it is possible even on a small lot to make a little garden with some rocks and plants that are not too gardenesque. The introduction of a pool, if carefully placed, will give scale to the design which must from necessity be rather miniature. It is best to select a spot that is screened from the rest of the grounds by shrubs or small growing trees, the planting material depending upon the space that is to be occupied. On the side toward the house or more formal part of the ground I would use the more floral shrubs as Lilac, Philadelphus, and Spirea, letting the native shrubs from the woods like Viburnums, Flowering Dogwoods, Azaleas or Rhododendron, face the little garden.

Seclusion and Surprise

A ROCK or naturalistic garden should never obtrude on the passerby. The very name suggests seclusion. I have seen areas where the arrangement of rocks, water, and plants was most admirable, but all screen planting had been omitted, leaving it open to the dust of a sunny street, in the evident desire that the world outside might enjoy this bit of mountain scenery, making a really beautiful spot unattractive and even unsightly by its incongruous setting. Every garden should be designed in relation to its surroundings, and if the final result does not make a pleasing picture, the attempt has been a failure.

Harmony should be the keynote of all garden design, sudden transitions from formal to naturalistic surroundings are unpleasant. To step directly from the porch of a Colonial house into a garden which strives for naturalistic effect is extremely displeasing to the true nature lover. Every house and lot is a separate problem in planting design and arrangement: the picturesque house on uneven land with outcropping rocks calling for a more naturalistic treatment than the house following Georgian or Colonial precedent on a level lot. Sometimes, even in the latter case, the transition can be brought about by a few well placed shrubs and dwarf growing trees which screen a dell where a little rock garden can be indulged in, but restraint must be the keynote.

If there are no rocks or natural ledges on the ground and the stones must be brought in from outside, great care should be taken in their selection. Newly quarried rock with sharp edges and pointed profile is difficult to place and apt to give the appearance of a dog cemetery, reminding us of our departed

four-footed friends. The illusion can be carried still further by placing a bottle, neck in ground, containing a label with the name of the plant. I remember an example of this sort which in my boyhood I considered a wonderful achievement. The proud possessor called it her rock friendship garden, as all the plants had been sent her by friends. She had travelled widely and was forgetful, so had taken this device for remembering her friends and the names of the plants, which were separated by stones of different colors, collected like the plants, from various localities.

The sentiment was fine, but the effect was—from an artistic standpoint—far from satisfactory, and could hardly be called naturalistic, although the designer had intended it as such. Unfortunately the people in the countryside considered it the show-place of the community and brought their friends to see this wonderful garden, with plants from China, Alaska, and, for aught I know, even from Patagonia.

The unusual and grotesque has a strong attraction for the average man and woman, especially if it belongs to a person of wealth who has travelled and has the reputation for doing the right thing. The real fact of the matter is we need higher standards in garden design as well as in painting, sculpture, and architecture. We should always differentiate between the garden for pictorial effect and the experimental ground for testing out new varieties. The builder of a rock garden or designer of naturalistic scenery must always guard against the latter, as the temptation is strong for using too many varieties and unusual, rather than beautiful, plant material.

The Stones or Rocks to Use

THE first step in building a rock garden is the selection of the site. The second is choosing the stones, which should harmonize with any existing rocks on the ground and be well weathered and of one color. Avoid hard rocks if possible; porous and absorbent kinds are best, for the plants' roots cling to them and find moisture in their cracks and crevices. Weathered limestone is especially suitable as it is usually filled with fissures, which form footholds for some of the finer Alpines, though limiting the designer to those plants that will thrive when lime is present. Tuffa, although more expensive, is without doubt the best of all rock for growing Alpines. Holes can be easily drilled and filled with earth. The roots of the plants will penetrate the stone and the little plants that were poor ordinarily under other conditions, will become strong and healthy. A few well placed large rocks are preferable to a lot of small ones.

To the careful observer the plants give the impression of growing on top of the rocks, but all collectors of Alpines know that these plants have a strong root system which reaches to quite a depth. They must have plenty of *light soil with good drainage.* If the soil is heavy, remove it to at least a foot in depth. The rocks must be firmly placed which means the greater part of the rock is beneath the surface, this gives the appearance of stability as though the rocks were natural outcrops. Care should be taken to pack the soil firmly and leave no half-filled fissures or hollows. All the rocks and plants should, when possible, be placed so they slope toward the soil; then all the moisture will trickle to the roots.

When selecting the plants it is wise to go slowly. I should advise using native material for backgrounds wherever possible. Contrary to general opinion, most of our indigenous plants take readily to garden conditions if care is taken to dig the deciduous kinds with plenty of roots and the evergreen species with a ball of earth.

If not practicable to collect in the immediate neighborhood, there are a number of good collectors of native material from whom stock can be purchased. It is never wise to buy stock that is poorly dug because it is cheap, as the loss is usually heavy and the results most discouraging to the beginner.

Before buying the small and finer plants read a good book on rock gardens describing plants for different situations. It is a mistake to select too many varieties.

Some of the Alpines are easy to grow; most of them respond to extra care; others are tantalizing in their requirements and should not be attempted by one unfamiliar with rock gardens. However, the addition from time to time of the more delicate and expensive plants, jewel-like in their rough setting, gives interest and variety to the planting and brings the garden to ever greater perfection.

The MAKING of the MUNSTEAD PRIMROSE and OTHER PLANT IMPROVEMENTS of GERTRUDE JEKYLL

THIS very interesting personal account of Miss Jekyll's improvement of the Primrose and other flowers associated with her name has come to us through the courtesy of Mrs. W. L. Carter of Lexington, Kentucky. While president of the Lexington Garden Club—one of the most active of Southern organizations, by the way—Mrs. Carter, herself a tireless gardener in general and a Primrose enthusiast in particular, wrote Miss Jekyll for information about this family of plants which for years she had been fruitlessly attempting to establish in her garden. Incidentally, the climate of Kentucky seems to present almost unconquerable difficulties to the growing of Primroses, and we are wondering whether any of our garden neighbors in the South have met with success in raising this altogether quaint and delightful little flower.

Miss Jekyll responded very promptly with a brief history of her work, begun in 1860 and carried through many years. This Mrs. Carter read to her club, and now generously offers us the privilege of publishing, in order that it may reach a larger group of gardeners.

Miss Jekyll has been closely identified with the modern interest in hardy, herbaceous garden plants in England and through her writings in the English periodicals has wielded a great influence. Indeed, she has reached a wide and appreciative audience on this side of the water, too, through her several books, notably "Colour Schemes in the Flower Garden," "Wall and Water Gardens," "Lilies for English Gardens," "Gardens for Small Country Houses" (the last-named volume in collaboration with L. Weaver, architect).

The popularity of the color-in-the-garden movement to-day may in great measure be attributed to the stimulation of Miss Jekyll's pioneer efforts—for more than half a century she has been unobtrusively and persistently translating dreams into actuality in her Surrey garden. Though now retired from

participation in active gardening, her achievements and high ideals have left their indelible record in gardening annals of the last sixty years.

From Munstead Wood in March, 1918, Miss Jekyll wrote to Mrs. Carter as follows:

"THE beauty and sweet scent of Primroses had always given me great delight, and I had a great wish to raise an improved strain of some good garden kind. My choice fell on the many flowered forms of white and yellow colourings, which we call Bunch Primroses, to distinguish them from the old florists' Polyanthus. It was as long ago as in the sixties of the last century when no such strain was available for garden use. I had found one whitish Bunch Primrose in a cottage garden, and from somewhere—I cannot now remember where—had obtained a yellower one. The seed was saved from both of these and a few of the seedlings showed a slight improvement. Year after year the same process was repeated, seed being kept from the very best only. In ten years' time there was a considerable advance both in size and quality; in twenty years the improvement was much more marked, and now, after more than half a century of patient observation and selection, it is really a fine strain of handsome garden plants. I had to deny myself the pleasure of growing the other coloured kinds, much as I delight in their rich reds and tender lilacs, because I wished to keep my strain pure, and pollen carried by bees would have caused undesirable crossing. The seed has now been put into trade and was introduced by Jas. Carter & Co.

"BUNCH PRIMROSES"

"Another plant that I thought might be improved was the pretty annual, Love-in-a-Mist (Nigella damascena). This was grown for many years in the same way and seed saved from selected blooms. When I was satisfied with the degree of doubling and the exact shade of soft blue that seemed desirable, it was given to the world through the seedsmen. I am not always in agreement with their way of describing it, for sometimes I see it extolled as if a Cornflower blue or even a Gentian blue. The quality of colour has no affinity whatever to either of these, for Nigella blue is a blue special to itself, of a quite distinct and curiously soft tone and texture.

"The old biennial Honesty (Lunaria biennis) was another plant that seemed capable of some advance in colour. By degrees a fuller, deeper tone was secured and fixed and now finds general favour.

"As a general remark I may mention (though merely as my own opinion) that the improving of colour in a flower is by no means always gained by making the colour more intense. In many flowers this has been carried too far, and harsh garishness is the result, whereas a tone of either rich or tender beauty is what should be aimed at. The way is to study the nature of the plant, and to come to some conclusion, partly by the help of an educated colour eye and partly by sympathetic insight, such as may guide one to a conviction that the colour of the flower has come to the point of its utmost possible beauty."

HOW MOUNTAIN PLANTS BEHAVE WHEN THEY GO TO THE SEASIDE

D. T. MacDOUGAL
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The Beneficence of "Moving Day" among the Plants—Some Scientific Experiments of Interest to the Gardener Revealing the Fact that Plants do not, as Commonly Supposed, Always Flourish Best Where Placed by Nature, but Sometimes Prefer Quite Other Environment

EDITORS' NOTE: Dr. D. T. MacDougal came well equipped to his present work of directing the botanical research of the Carnegie Institution, having previously had much to do with horticultural activities as Assistant Director of the New York Botanical Garden. He is now occupied with investigating the elusive mysteries of the reactions of plants under varying conditions, a matter which in the long run is of profound importance to the gardener. In this article, the first of a series of several that Dr. MacDougal will contribute to THE GARDEN MAGAZINE, he lays before our readers some important evidence on the different ways the same plant may behave when grown under different conditions. That all plants do not react in a corresponding way tends to add interest to the problems of the cultivator.

A PLANT on the top of an isolated mountain lives on a climatic island. On such "insular" ranges as furnished the material for my experiments with various forms of vegetable life, the plants might not spread beyond an area the size of Manhattan Island without going down the slopes into a climate and into soil conditions utterly strange to them.

As will be seen from the following account of the behavior of trees shrubs, etc., when arbitrarily shifted by man from one set of conditions into other and quite dissimilar ones, certain deductions of considerable significance and rather wide application have been suggested.

No further detail than given below is necessary to emphasize the fact that the place in which we find a plant as a native may not by any means offer the best conditions for its development or survival. It is also to be seen that mountain species taken to the seaside may, in their luxuriant growth and abundant reproduction, display unusual features and a modified behavior in response to the new environment. We have not established, however, that the new characters could be carried back to the old habitat or taken to a newer one that might be reached by further migration. The apparent separation of closely related strains or species in a new habitat raises a point of equal importance in the study of heredity and evolution.

THE ARIZONA WALNUT AT THE SEASIDE

The larger tree with many branches, at the left, was grown from a nut from the mountain top, and the slender tree at the right came from a nut taken from a tree at the base of the mountain. Both are 12 years old

The surrounding country near the Laboratory* is desert, and only the restricted surface above 7,000 feet affords conditions suitable for the growth of a forest, principally of Pines, in which are also to be found Oaks, Spruce, Poplar, Walnut, and small Maples. The annual rainfall varies from 30 to 40 inches, coming in winter snows and midsummer rains. The thermometer falls to 15°F and rises to 85° or 90° F in the summer; the period in which growth is possible being nearly five months.

Now such a characterization would seem to duplicate conditions in Michigan, New York, or New England, and when the experiments were begun in 1906, a number of species were brought from these regions and put into the experimental plots on the Santa Catalina mountains about forty miles from the Desert Laboratory. One of the most interesting features of the result was the high percentage of failures. Arisaema, Menispermum, Aletris, Apios, Bicuculla, Salomona, Lobelia, Vitis, Hamamelis, and others failed utterly, although introduced in large numbers and in several seasons. Fragaria virginiana, F. vesca, Hepatica, Podophyllum, and Scrophularia showed survivals, actual vigorous establishment being noted only in the Strawberries and Podophyllum.

The disappearance of the other introductions could not be attributed to the temperature or to the total rainfall. The air, however, shows a low relative humidity except in cloudy weather, and the soil moisture runs low before the summer rains begin. These conditions, together with the cold nights, are adverse to the survival of many lowland plants.

HAVING some means of estimating the mountain climate in the terms of the meteorologist and with regard to its effects on well-known plants, we were in a better position to appraise the behavior of plants native to the region when transported eight hundred miles to the California Coast.

The plots at the Coastal Laboratory, a hundred miles south of San Francisco, are a few hundred yards from the beach. The climate is of the equable type. The thermometer falls to the freezing point for a few hours only each year, and while it does show temperature as high as 90°F, yet the actual exposure at this temperature is so small in comparison with the duration of the growing season, which extends over eight or nine months, that the effect is slight. Rainfall comes in the winter season and spring, beginning again in late fall, so that the soil moisture progressively decreases to a minimum of 5 or 6 per cent. by August.

The illumination on the mountain top is intense. Fogs which may hide the sun for two or three weeks occur in the coastal location. Bringing a plant to such a place is evidently an experiment widely different from that of moving a plant down a mountain slope in a well-watered region to the plains and valleys below.

Eighteen species were taken from the "insular" mountains in Arizona to the California coast in a descent of a vertical mile and a half; of this number fifteen survived. But half of the Eastern species previously taken to the mountain top with a high percentage of failures, survived in this location.

The plants from the mountain which lived through their descent to the shore were: Dugaldea Hoopesii (Owl's-claws), Fragaria vesca (Western Strawberry), Juglans major (Arizona Walnut), Oenothera Hookeri (Hooker's Evening Primrose), Parthenocissus dumetorum var. laciniatum (American Ivy), Potentilla Thurberi (Thurber's Cinquefoil), Quercus hypoleuca, Quercus reticulata (Small Mountain Oaks), Rhamnus ursina (Coffee Berry) Ribes pinetorum (Mountain Gooseberry), Rudbeckia laciniata (Cone-flower), Scrophularia parviflora (Figwort), Sedum stelliforme (Stonecrop), Tradescantia scopulorum (Spiderwort), Vitis arizonica (Arizona grape), Solanum Fendleri, (Fendler's Potato).

The introductions were begun after three years' experience with these species in their mountain habitats, and in all cases the transfer was made at the time when conditions were supposedly most favorable. The least possible tillage was used in the plots at the seaside, the purpose being to test the actual chances of survival under conditions most nearly approximating those which might occur without the intervention of man. The soil in both cases contained a large proportion of decomposed granite, but the substratum is such a complex factor and is so largely a function of the climate that too much must not be made of this feature.

The plants native to the mountain which failed to survive at the seaside included the New Mexican Locust (Robinia neomexicana), the New Mexican Squaw-weed (Senecio neo-mexicana) and a small Cinquefoil (Potentilla subviscosa), which singularly enough ranged widely on their native mountain slopes, but which could not make the adjustment to the coastal climate.

In addition to the three years of experience with the mountain plants before actual transfers were begun, two or three visits were made each year to the mountain habitats, while the greater part of the summer was spent at the coastal location, so that the

*The Desert Laboratory of Carnegie Institution at Tucson, Arizona.

best of opportunities were available for repeated transfers of material and for actual comparisons of the behavior of the species in their ancient habitats and in their new and strange environments. The large percentage of survivals was a gratifying surprise, although in such experimentation the failures often yield more in the way of scientific results than the survivals.

THE most striking feature in the appearance of the introduced species was their vigorous and luxuriant growth. Culturists have been disposed to regard vegetative development and reproduction by seeds as competing or antagonistic processes, but no such relation could be adduced in the present instance.

The extended season gave conditions for growth over a time nearly double that of the mountain habitat, but with softer light. Long continued development of the shoots with multiplication of the branches and total leaf surface resulted, while such plants as Scrophularia, with thickened roots or with rootstocks, showed an exaggeration of these features, and the increased storage capacity was utilized for larger quantities of starch than were stored by plants on the mountain. The weight of the tubers formed by the Wild Potato was about double that displayed by plants grown in the shorter season of the mountain location.

Dugaldea, Fragaria, Parthenocissus, Oenothera, Potentilla, Rudbeckia, Scrophularia, Sedum, Solanum, and Tradescantia all perfected abundant crops of seeds. The Walnut has had many flowers and set many nuts, but matured only a few; the Arizona Grape sets no fruits and the Oaks are coming into bearing. The Gooseberry has showed many flowers but, so far, matured no fruits. The conspicuous failure of the Grape is due to some unknown factor, probably not climatic, connected with pollination.

While the general aspect of some of the plants differs from that in their native habitat, as yet nothing has been seen in the way of a bud sport, and too few second generations have been grown from seeds to give fair opportunity for mutations to appear.

One fact of interest in the evaluation of species is afforded by the Walnut. The Walnuts in Arizona, growing in the cañons at an elevation of from 3,000 to 7,000 feet, have been included in one species as named above. However, when nuts from the trees at the lower altitudes and others from the mountain top are taken to the coast they produce trees of unlike appearance (as shown in the accompanying photograph) suggestive of developing differences between closely related forms. The anatomical details of the leaves and stems of these trees are as unlike as their general stature appears to be.

The anatomical changes in many of the introduced forms were very striking, although their actual genetical importance is unknown, since but few seeds have been taken back to the mountain habitats. The Strawberry forms one, two, or sometimes three extra leaflets. Scrophularia developed some peloric or regular flowers, while in many the corolla showed extra divisions and an extra stamen. One flower had 10 parts to the corolla, 9 parts to the calyx, and 8 stamens; and the "sterile" stamen in many instances held good pollen.

THE ROMANCE OF ST. VALENTINE

JANE LESLIE KIFT

THE origin of St. Valentine's Day is rather hazy and, like many another custom to-day current in Christian countries, dates back to an old pagan festival. The simple folk of ancient days believed that on February fourteenth the birds choose their mates for the coming year. Also in those bygone times, according to legend, maidens used to gather at the temple or festal board and place their names in boxes which were afterward solemnly passed among gatherings of the sterner sex and each man drew the name of his future wife—a ceremony which has continued in modified form through the centuries and may still be found in outlying districts of England.

In Derbyshire if a maiden does not receive a token from the man of her choice on the morn of St. Valentine, she is said to be "dusty" and her friends, with the aid of a broom, remove the invisible dust after which the token is certain to appear. Should you live in Lancashire and on February fourteenth chance to meet a tall man, you must immediately plant Phlox which will grow taller than any in all the surrounding country. But if the first man you meet be short, do not plant this showy flower because it will grow only one foot high.

VALENTINE BASKET OF PRIMULA MALACOIDES

Would you be lucky in love, be sure to wear a yellow Crocus on St. Valentine's Day. Should an up-to-the-minute colonial bouquet or a basket reach you this Valentine morning, this infallible, time-honored rite is recommended: on a slip of paper jot down the name of the hoped-for donor with your own beneath it; then tuck the slip under your pillow and, just before retiring, repeat this thyme:

"If he who sent this valentine
Is named above with mine
I pray good saint that by
this line
I may his name devine."

In the land of dreams you will come face to face with the giver!

At the foot of the lawn a pool ringed with Campanula, Forget-me-not, and Siberian Iris

Rose beds bordered with Violas and backed by stately, native Douglas Firs

The Gardens at "Arrow-wood"

Home of
Mr. and Mrs. S. S. MONTAGUE
Hillsdale, Oregon

In six short years, for years are short when we come to reckon in nature's terms, a country field and some three acres of woodland have been transformed into lovely sweeps of lawn and colorful bloom—an effect very English in character and yet, oddly enough, equally fitting the Western landscape. A species of Spiraea found all through the woods gave "Arrow-wood" its name, and has, moreover, adapted itself gracefully to garden conditions in the rôle of background for the perennial border

View of the west or garden front of the house from the perennial border with Larkspur (on left), Pyrethrums, Iris, and Day Lilies (on right)

Roses that uphold Oregon's fame in this field; varieties Mrs. E. G. Hill (at left) and Paul Lede (at right)

SOWING SEEDS FOR AN EARLY START

W. L. WILSON

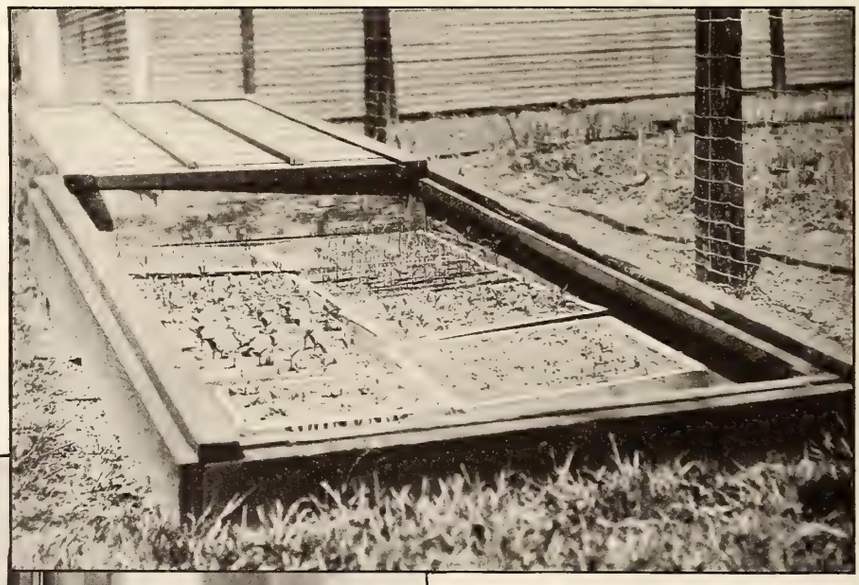
WITH or without a greenhouse, an effort to get early germination on many vegetable seeds for the spring garden means much in ultimate results. If seedlings are started under protection, when outdoor planting time arrives an advantageous beginning can be made with growing plants instead of dormant seeds.

This is equally true of plants for the flower garden. Early starting of annuals means flowers weeks ahead of outdoor sowing. With space available on a greenhouse bench, seeds may be sown during February in flats and the flats set down on the bench, or they may be sown directly in the soil of the benches.

The heat of a cellar window frame (as described in THE GARDEN MAGAZINE, November, 1921, page 148), can be utilized in like manner, or the window of a "sunny room" of the dwelling. First provide a table about fifteen inches wide, as long as the width of the window and as high as the window sill. On this put a galvanized iron pan of like dimensions with the top flaring slightly, and about two and a half inches deep. For appearance's sake it might be painted to match the table. Have a supply of shallow boxes (flats) of such size that a certain number of them will fill the pan without waste of space. And don't make them too big! In a box 7 x 4 in., fifty or more Cabbage or Tomato plants can be grown to the first transplanting stage without difficulty; two of these boxes will go lengthwise across a fifteen-inch pan. It will also be a convenience to have some boxes that will fit three across the pan for plants of which only a small number is needed.

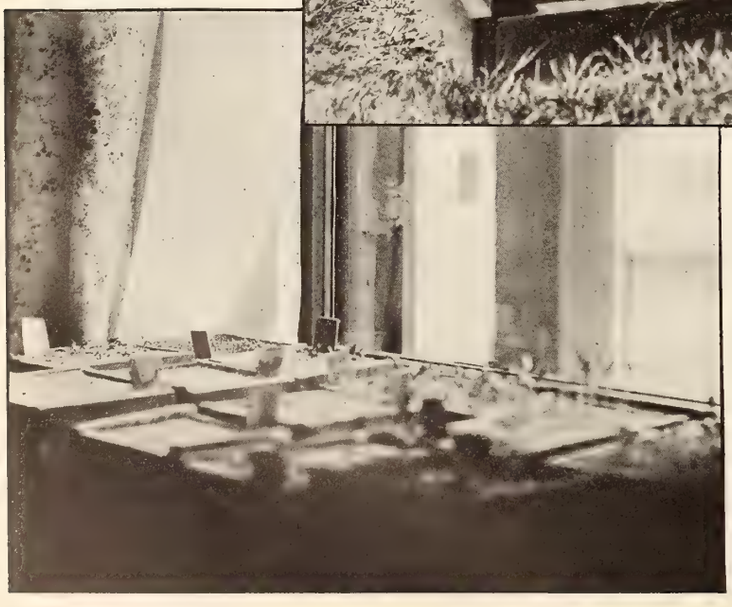
These boxes, with the seeds sown on a layer of clean sand on top of the earth, are fitted into the pan, which prevents all possibility of soil getting upon the floor. Another advantage of the pan is realized when it comes to watering. Fill it with water and keep it full by adding more water until the seed boxes show a wet surface. Then plunge a quarter-inch piece of soft rubber tubing into a bucket partly filled with water and when the tube is entirely filled leave one end in the bucket, bending the other end sharply back on itself so that the water cannot run out when it is lifted; plunge the bent end into the water in the pan and release it, and in a few minutes the water will all be siphoned out —and, what's more, without getting into trouble with the housekeeper by making a mess on the floor. With this method, and a sand surface on the seed boxes to serve as a dust mulch, one watering a week ordinarily should be sufficient, especially if the boxes are covered with pieces of glass.

Start, of course, with the hardier vegetables, such as Lettuce, Cabbage, Cauliflower, Kohlrabi, Beets, etc.; follow with Tomatoes and some of the hardier flowers, and finish with Eggplants, Peppers, and the tenderer annual flowers. The routine is the same for all: germination in the sunny window, and perhaps, but not necessarily, staying there until the transplanting size is reached; transplanting into flats, or better still into paper pots or cells, with a period in the window frames; then removal to the coldframe for better light and air and for hardening as the weather improves; and finally transplanting into the garden. With limited facilities it sometimes takes pretty resourceful management to prevent the marching plants from treading on each other's heels, so fast they follow; but it can be done, and the oftener it is done the more smoothly it works.



Pan containing seed boxes by a sunny window; seedlings to be transplanted to frames or other cool quarters as soon as big enough to handle

Taking advantage of warm, sunny days to give the plants in the coldframe all the air possible



Flat holding six pots of wintered-over Lettuce, March 18th, just before setting out in the garden under portable frames

I. A DECORATIVE PAINTING IN THE TOMB OF APOUI, NINETEENTH DYNASTY, ILLUSTRATING THE USE OF SHADUFS IN WATERING THE GARDEN. (For fuller description see page 313)

A PICTORIAL HISTORY OF THE GARDEN—II

H. H. MANCHESTER

Transplanting Trees Three Thousand Years Ago—First Attempts at Founding a Botanical Garden—The Temple Gardens of Ancient Egypt

EDITORS' NOTE:—In the initial article of this series (see THE GARDEN MAGAZINE for January, 1922, pages 237–240) gardening activities were traced from the dawn of history in Egypt up through the Twelfth Dynasty, or until nearly 2000 B. C. Then followed a period of political confusion with the invasion of the Hyksos or Shepherd Kings who swept into northern Egypt from Asia. These warlike souls left comparatively few monuments to record the story of the next five hundred years, and so it was not until after their expulsion by the rulers of Thebes and the establishment of the New Kingdom that we are able to again pick up the thread of our narrative about 1633 B. C. after the accession of Thothmes I.

It is amazing to find the Egyptians thirty centuries ago raising Apples, Artichokes, Asparagus and other delicacies still grown by us to-day; to come upon them busily irrigating, transplanting, cultivating their gardens with all the zest and much of the skill of a twentieth-century gardener. For all they lived so very long ago and so very far away, we feel ourselves their kin, linked to them by a fundamental instinct common to both—the need and the joy of delving.

It is pleasant to reflect that the beauty of the garden has long been a source of delight to men in many lands, and today's "high tea" on the terrace is lent an added piquancy by the memory of Asurbanipal and his queen dining out-of-doors in ancient Assyria with similar enjoyment—and greater state—some twenty-five hundred or more years back.

To follow the footsteps of the garden from its earliest beginnings up through the ages; to trace its passage from Egypt to Asia Minor, Greece, and Rome; to watch its development in the hands of Mahommedan and mediaeval monk is a superlatively fascinating pursuit to gardener and antiquarian alike, who will find in Mr. H. H. Manchester an able and dispassionate guide during the coming months as successive accounts appear.

IN EGYPT THIRTY CENTURIES AGO

UNDER Thothmes I, in the early part of the Eighteenth Dynasty, lived the scribe Anna, to whom we should offer many wreaths for furnishing us with the most definite statement in existence of the contents of the Egyptian garden. In his tomb his soul is pictured going forth to enjoy itself in a garden as he did in life. This is supplemented with a unique list of his trees, which runs as follows:

Sycamores 90, Persea trees 31, Date Palms 170, Dom Palms 120, Fig Sycamores 5, Acacia 3, Quince 1, Vines 12, Other Fig trees 5, Thorns 5, Poplars 3, Willows 8, Tamarisks 10. Counting six other specimens which are unidentified, there were about five hundred in all.

In this period we find a remarkable evolution of the garden in connection with the temples. This was due, no doubt, both to a high appreciation of the beauty of the garden, and to the very important use of its products as offerings and for other religious purposes.

One vegetable product most essential in the ritual of the Egyptian was incense. This was not native to Egypt, but was imported from the Land of Punt, which, for this reason, was called god's land. This in itself indicates in what great esteem incense was held. It was considered so important that Hatshepsut, a queen of the Eighteenth Dynasty, fitted out an expedition of several of the largest ships of the period, and sent them to Punt to bring back growing incense trees and other products of the country (Fig. III, page 312). This is probably the earliest record of a deliberate transplanting of trees from one country to another.

The expedition was accounted by the queen as one of her greatest deeds, and described in detail in the temple in which she expected to have her tomb. Various scenes of the sailing of the ships, the trading in Punt, the importations, and the presentation of the offerings to the god, help to make the narrative vivid.

One of the paintings illustrates the carrying of the living Myrrh trees on board one of the vessels. The roots were placed in a large bucket to which a rope was fastened in a loop, which was hung over a pole. The carrying of each tree up the plank was accomplished by six men resting the pole upon their shoulders. This picture represents eight such trees, which was about a quarter the number imported.

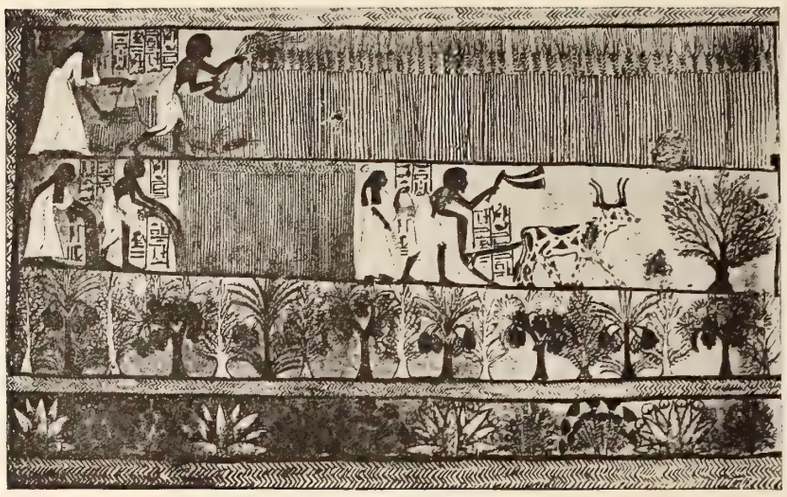
Over the picture is written a description which runs in part: "Loading the ships to the full with wonders of the Land of Punt; with rare fragrant woods of the god's land; with heaps of myrrh and resin; with living myrrh trees; with ebony and genuine ivory; with green gold of Emu; with cinnamon wood and khesyt wood; with ihmut incense and acacia incense," etc.

After the expedition returned, the offerings were presented to

the god Amon. These included, according to the inscription, "thirty-one living myrrh trees, imported as wonders of Punt for the glory of this god, lord of Thebes; never before was such a deed since the beginning of time."

In the speech of the queen at the ceremony, she declared: "Trees were taken up in god's land, and transplanted in the ground in Egypt, for the king of the gods."

One use of the Myrrh trees is indicated in the queen's statement concerning them: "They were imported to produce myrrh for pressing out ointment for the divine limbs."



II. HARVESTING FLAX AND GRAIN

From the tomb of Senezen, a lady of the Nineteenth Dynasty. Plowing as well as harvesting is being done by the, to us, novel means of a pair of cows yoked together by the horns. (See text, page 313)

In transplanting them to the temple garden, the queen made perhaps the first attempt at founding a botanical garden. She seems to have realized this, as she declared: "I have heard my father . . . bidding me to found for him a Punt on his estate, to transplant the trees of god's land near to his temple in his garden."

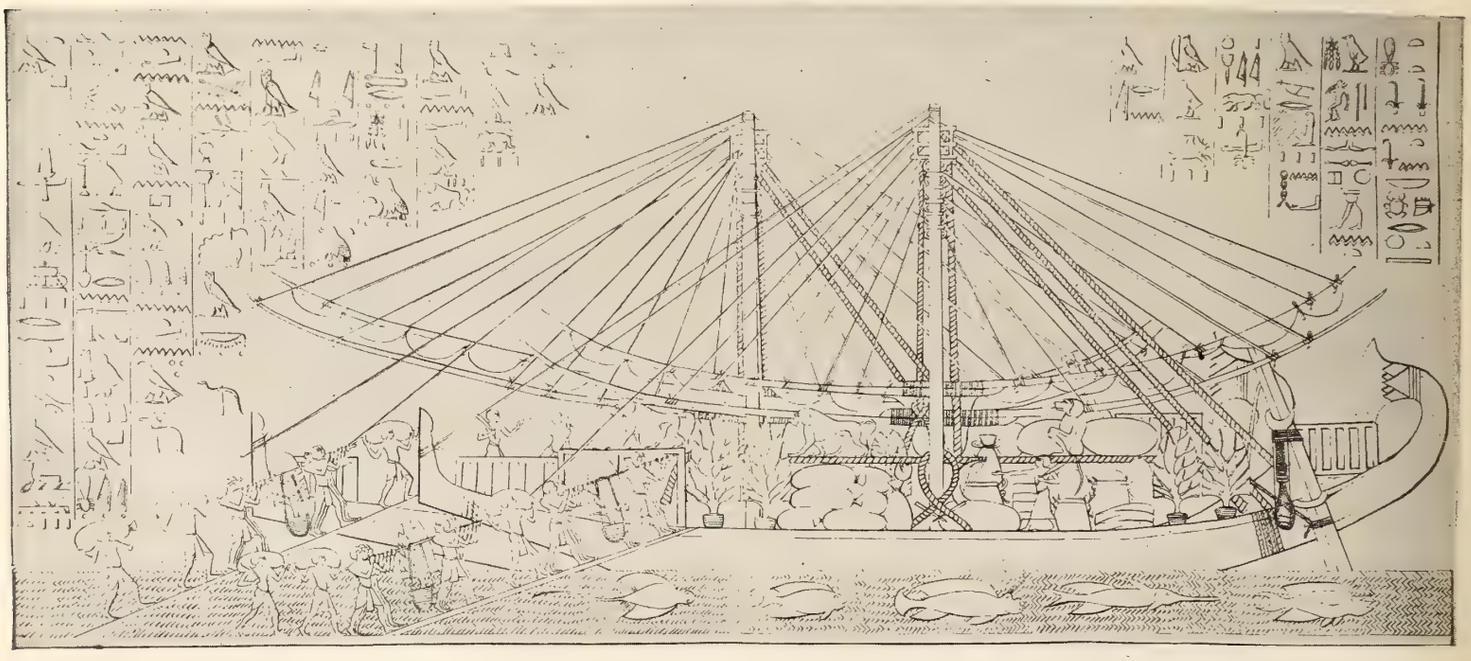
WITH a similar motive, the queen's younger brother, Thothmes III, sent out an expedition which collected many rare plants, probably from western Asia and the east coast of Africa. They are pictured in a long succession of figures on the walls of the Temple of Karnak, but still await careful study by some historical botanist. Thothmes III also presented a garden to the god, Min, as noted in the inscription: "I, the king, founded for him a garden for the first time, planted with every desirable tree, in order to produce therefrom divine offerings for every day." The fact that the king says that this was the first garden made for Min, suggests that the custom of supplying the temples with gardens was just becoming established.

Another king of the Eighteenth Dynasty, Amenhotep III, bursts into praise of the garden as follows: "The garden is planted with every flower; how lovely is Nun in his pond every season!"

A very remarkable representation of a garden has been found in a tomb at Thebes (Fig. IV, page 313). It is situated at the side of a canal which appears at the right of the picture. It is entered through a gate, and perhaps a porter's lodge, from which a door passes into the vineyard. Here the vines are trained against the stone wall and upon trellises. Four ponds appear in the plan, in each of which may be seen Lotus, and either geese or ducks. At the side of the ponds are flowering plants, and facing two of the ponds are small arbors from which one could look out upon the water. Various rows of trees are depicted. At the top and bottom appear rows of Dom Palms and Date Palms, sheltering smaller trees, which may represent Acacias. The row of trees at the right of the garden is probably made up of Sycamores. Other sorts of trees are represented, but cannot be identified with certainty. In the garden house, which may be seen at the left of the vineyard, are shown several offerings of flowers.

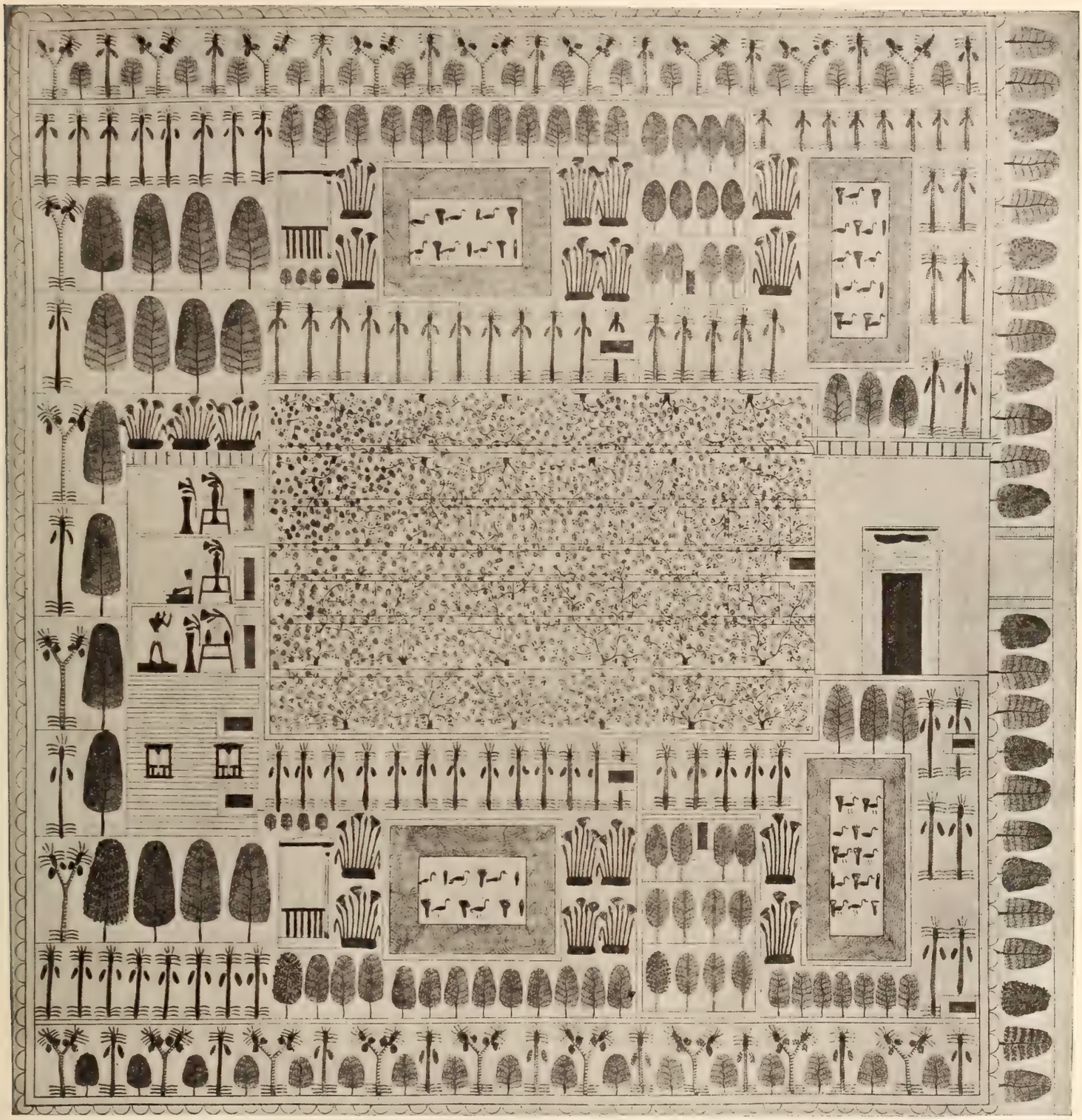
While too much stress should not be laid on the trees and plants actually depicted, there is no doubt that the painting indicates the most popular species, and, above all, affords a clear conception of the formal plan for the setting out of the garden favored by the Egyptians of that period.

Another tomb painting from Thebes gives only a view into the garden, but is interesting as including the Pomegranate, and as showing the relation of the garden to the mansion, a plan of which is drawn in detail.



III. IMPORTING INCENSE TREES FROM THE LAND OF PUNT FOR A TEMPLE GARDEN IN EGYPT

This expedition sent by the energetic Hatshepsut, a queen of the Eighteenth Dynasty, is probably the earliest recorded transplanting of trees from one country to another. Punt has been identified as that part of the Somali country on the eastern coast of Africa bordering the Gulf of Aden which meant a distance of about 2000 miles traversed. (See descriptive text above and on page preceding.)



IV. PLAN OF AN EGYPTIAN GARDEN AS REPRESENTED IN AN ANCIENT THEBAN TOMB PAINTING

This quaint method of presentation has considerable pictorial quality and, in most cases, the symbols are as easily read as names. Here we have a number of garden features still in wide use to-day such as the pool, the arbor, and the vine-covered trellis. Note also the offerings of flowers pictured at the left of the central area. (For more detailed description see page 312)

In the Nineteenth Dynasty, Harmhab, the general who later became king, in a hymn to Ra, emphasized his desire for flowers among the offerings,

> "Rise, thy heart rejoicing. . . .
> That my heart may be satiated with every offering,
> May receive flower offerings from the temple."

The tomb of Senezen, a lady of the Nineteenth Dynasty contains an interesting scene of the plowing and gathering of Flax alongside a garden of trees and flowers (Fig. II, page 312). The inclusion of Flax was no doubt intended to give her material for weaving in the next world. The plowing is being done with cows yoked together by the horns. Below is a fruit garden with heavily loaded Date Palms, Dom Palms, and Wild Figs. Beneath is an irrigation ditch filled with water; then a row of flowering bushes or plants.

A highly decorative painting (Fig. I, page 311) of this dynasty is found in the tomb of Apoui. In the centre of the picture is the entrance to the house, with two columns having lotus-like capitals. At each side the Water-lily and other aquatic plants grow at the edge of two reservoirs. At the right and the left in the shade of Sycamores are installed two shadufs for irrigating the

garden. Their method of construction is plainly indicated. The poles are swung on posts, the heavy end lifting the bucket of water, which is fastened to the lighter end of the pole.

Rameses II declared that "he set out many gardens, all filled with many trees having sweet-smelling and odorous woods, the products of Punt."

THE greatest founder of gardens, however, was Rameses III of the Twentieth Dynasty, about 3,000 years ago. The so-called Papyrus Harris, which is 133 feet long, contains several passages of great interest from our present viewpoint. They not only give the atmosphere of the movement for temple gardens, but supply us with many details.

In part, Rameses' narrative runs as follows: "I built for thee, Amon Ra, a stately palace . . . It was encompassed with gardens and arbors, abounding in fruit and flowers for the two serpent goddesses. . . . I dug a reservoir before them filled with lotus flowers. I set out for thee, Amon, vineyards in the oases. . . . I supplied them with gardeners from the captives of the conquered lands; having reservoirs, filled with lotus flowers, and with shedeh. . . . I beautified thy city, Thebes, with trees, plants, isi flowers, and menhet for thy nostrils. . . I constructed for thee a majestic area in the city of the north . . . supplied with luxuriant gardens and promenades; with all sorts of date groves loaded with fruit, and a consecrated avenue bright with blossoms of every kind, isi plants, papyrus, and dedmet flowers in number like grains of sand. . . . I founded for it the garden Kanekeme in the Delta, watered like the two lands in the great olive country, bearing vines; surrounded by a wall . . . planted with great trees in all its many paths, wherein oil was more plenteous than the sand of the shore."

In all, Rameses III seems to have established about 514 gardens to the different gods.

The enormous number of flowers employed in the religious festivals is indicated by a list of the offerings for the new feasts found by Rameses III. This includes, according to Breasted's Ancient Records: Tall bouquets, 3,100; Garden fragrance, 15,500; Isi plants, 124,350; Garlands, 60,450; Blue flowers in ropes, 12,400; Flowers for the hand, 46,500; Lotus flowers for the hand, 144,720; Lotus flower bouquets, 3,410; Papyrus flower bouquets, 68,200; Papyrus stems, 349,000.

There are a number of other trees and plants noted in the tombs of the Theban Empire which perhaps deserve particular mention; such as the Apple, the Juniper, Rosemary, Jasmine, St. John's Bread, and Myrtle. The Chrysanthemum, the Rose, the Heliotrope, and the Iris are also included. Among the spices or condiments are cinnamon, mustard, cummin, succory, and coriander. Vegetables which should be mentioned are the artichoke, asparagus, and cucumber.

In accordance with their belief that all things had a spiritual double, the Egyptians assigned spirits to trees, which in poems we find thinking and speaking much as human beings. One such poem is the call of the Sycamore, or Wild Fig, to the little daughter of the household to come and rest under its shade on the festival day when the garden was in full bloom. The verses are in part as follows:

The little sycamore,
Which she planted with her hand,
Begins to speak,
And its words are like drops of honey:
It is charming, its bower is green,
Greener than the papyrus.
It is laden with fruit;
The color of its leaves is as glass,
Its stem is as the color of the opal;
It is cool in its shadow.
It sends a message by a little maiden,
The daughter of the chief gardener.
She makes haste to her beloved:
"Come and linger in the garden. . . .
The servants who belong to thee
Are bringing beer of every kind
With all manner of cakes,
Flowers of yesterday and to-day,
And all kinds of refreshing fruit.
Come spend this festival day,
And to-morrow, and the day after to-morrow,
Sitting in my shadow. . . .
I am of a silent nature
I do not tell what I see,
I do not chatter."

WALKS AND TALKS AT BREEZE HILL—VI

J. HORACE McFARLAND

Wherein is Reflective, Critical, Philosophical, and Friendly Comment About Plants and Their Behavior, Inspired by Personal Experiences in a Garden Made for Pleasure

LAST month I had something to say about Forsythia in connection with a memorandum on Prinsepia sinensis. It has since been possible to untangle the situation respecting the better known Forsythias as I have them at Breeze Hill, and I can emphasize, therefore, the feeling that it is sheer nonsense to grow even Forsythia intermedia when far better and more beautiful varieties can be grown with exactly the same effort.

Long ago the Arnold Arboretum called attention to the value of Forsythia intermedia, which is a hybrid between F. viridissima and F. europaea. Intermedia, therefore, wholly displaces viridissima. But now comes the further advance that sub-varieties of intermedia have developed, which are of peculiar beauty and value.

F. intermedia primulina is several days earlier, and its flowers are paler than intermedia. The plant, therefore, is of value because it adds color variation to this important family.

But far and away the best of all is F. intermedia spectabilis. It has more flowers, and larger flowers, and flowers of deeper color than any of the other Forsythias. It pales its parent intermedia, and makes its culture unnecessary save for reference purposes. This superb hybrid is just as vigorous as intermedia and has an even better blooming habit. In fact, it is impossible to see how more flowers could be put in more orderly and pleasing disposition on any plant than those that clothed my plants of F. intermedia spectabilis last spring. The deeper color adds a real and desirable advantage not at all to be overlooked.

Very rapidly the nursery resources on the Forsythias could be changed if the nurserymen cared to get a little start in this one "best bet" among the Forsythias.

[And we are in full accord as to this best of all Forsythias, which has also proved bud-hardy in the North, by the way, when the other forms have suffered.—Ed.]

Seedling Heliotropes

TWICE in the Breeze Hill garden cycle we have grown Heliotropes from seed—each time from one packet of presumably select seed as sold by most seedsmen. Each time the experience has been pleasing, and particularly in 1921.

The seed was started indoors in late March, and the puny, little transplanted plants sojourned awhile in neglect during my preoccupation with the weary months of the printers' strike. Eventually—in June—I planted them in various odd corners, some shady, some half shady, and some not at all shady.

The harsh heat and drought of the memorable 1921 summer made coddling—or watering—necessary to keep the little plants alive. Once they took root-hold, growth was rapid, and I was surprised one day by coming upon a great head of bloom on one Heliotrope growing in half-shade. It was a full ten inches across, and of a lovely tint, but not as fragrant as the familiar white greenhouse variety, Mme. de Blonay.

Since, all the plants have bloomed beautifully. Left to themselves, each sends up one strong central shoot on which comes a great cyme of flowers, varying with the individual plant from white or near white to a rather deep blue. Right on to frost these flowers have been freely produced above rich green foliage of good size. I am altogether pleased with the seedling Heliotropes; they will come again at Breeze Hill.

Two Unusual Annuals

IT WAS rather by happy accident that in 1921 two pleasing and not ordinary annuals made their first bow at Breeze Hill.

I have been fond of Portulaca all my life, and the fondness was accentuated some years ago when I saw how a friend at Eagles Mere had grown them in the crevices of a stone surface drain down her garden walk. For several years we bordered the axis walk at Breeze Hill with them, giving the space eventually to garden Asters.

This year I sowed about thirty feet of deep border in the west garden to Portulaca. Among the packets of seed that came from Burpee was one marked as "Portulaca Parana," which was separately placed. It has produced more and larger flowers than the familiar type, on greener and stronger plants, and all the flowers are of a really rich and refined magenta, or purplish carmine.

Now I know how magenta hurts some eyes—I remember seeing the real pain evidenced in those of Neltje Blanchan, of fragrant memory, when she came upon a staring vine of Bougainvillea in Nassau—a pain which her family hardly comprehended. But this Parana Portulaca is different, and entirely desirable. I commend it for the odd, sunny, and dry corner needing a flash of summer-long bright color.

My son chanced upon Gaillardia amblyodon in the spring seed selection, and it proves very desirable as an Annual Gaillardia. The rabbits that infest Breeze Hill—and we're hardening our hearts against them now—like it too well, so that not many plants were left after the setting out to take the place of Annual Delphiniums. Those that did escape the chewing depredators have done well.

The flowers are freely produced, as with all the Gaillardias, are nearly two inches across, on single stems, and are of a pleasing light red, deepening as the petals approach the maroon centre which earmarks the whole family as of the compositae.

This Gaillardia is a native of Texas, the Cyclopedia tells me, while the other annual form, G. pulchella, is wild in Arkansas. My eyes tell me that it differs radically from the "picta Lorenziana" type of G. pulchella in that its attractive flowers are individual, like the perennial form, and not in clustered heads. I am intending to know more another year of G. amblyodon.

The Soil Betterment

WHEN my son, who sets out in order the things we are to grow for the Breeze Hill table, told me one early March day of last year's abnormal spring that we ought to "take a chance" on planting some Peas two weeks ahead of the record, I assented, and did before-breakfast exercise in spading up the row location assigned. As I drove the Burbank spade, which has a full twelve-inch blade, from point to heel, straight down into the moist earth, and turned it up, I observed that only the pointed tip of the tool brought away the yellow shale which was the natural soil of this particular spot four years ago.

A foot of good, strong, arable soil! To me it is a delight to touch, particularly as it proves what mere man with a little energy may do on the earth's surface. When this East Garden was opened from a very poor lawn, there was a scant four inches of topsoil, and a harsh, heavy depth of shale subsoil. Roots of Potatoes and Corn, of Beans and Peas, have penetrated it; much manure has dressed it, and one good green mantle of Sweet Clover has been folded down into it.

Most of all, it has been honestly spaded. At first the plow turned down the sod; and a crop was grown. That fall, I put a man at it with a spade, and saw him slouch and slant a good tool into the earth perhaps five inches. Gently but firmly I put upon him the desire I had to have that spade go straight down, all the way down, even if he had to stand on the heel of it.

Did he grumble? Yes, he did! But also he spaded; not rapidly, to be sure, but honestly. The yellow shale came up, to meet the frost and the rain and the wind; the topsoil went down.

Each year the same operation has been repeated; and, of course, each time more easily. Now the results begin to be apparent; for twelve inches of strong soil, generously enriched as it is used, do things for me, and do them easily. The good soil is the product of fertilizer and endeavor, but most of all it comes from that honest foot of spade penetration, the best "subsoiling" possible to get.

LOOKING AT NEXT MONTH!

WITH March comes Spring; outdoors awakens and the gardener's season of passive interest gives way to action. There's so much to be done, and time nor tide will wait. The March GARDEN MAGAZINE *is vibrant to the season's thrill. Mr. McFarland in continuing his "Walks and Talks," discusses entertainingly the growing of Roses, and has something helpful for the gardener who is Planting Roses This Year. Other appealing articles discuss Varieties of Roses, particularly the Recent Introductions of both Bush and Climbing Sorts—and all in time for this year's planting!*

Equally insistent for the month is Strawberry Planting with which subject Mr. Doan opens a series of detailed discussions of Home Fruits in continuation of the general planting in this issue. Shrubbery Planting for Garden Pictures During the Four Seasons will offer suggestions for the topic of kinds that have attraction in Berry, Fruit, and Fall Color as well as for Bloom in Spring.

Seeding and Upkeep of the Lawn will surely be welcome to many a reader, especially when new grading or construction work has been done in winter or autumn.

The home gardener who wants Salads will find his Lettuce Questions Anticipated and Answered; especially "Why They Don't Head!"

To these features of insistent interest will be added others of wider general appeal and, of course, the usual seasonal departments of practical instruction, together with further instalments of serial features already begun.

BRINGING ALPINE PLANTS INTO OUR GARDENS

The Lure of the Rock Garden and of its Appropriate Plants

AN INTERPRETATION AND AN EXPLANATION

Of all the specialized forms of gardening the Alpine or Rock garden, the Rockery, or whatever you care to call it, has slowly but none the less surely been creeping forward into a definite place in popular esteem, more decisively indeed in recent years than any other one specialty since the advent of the Hardy Perennial Border. The reasons for this are manifold: for one thing it is a new phase of gardening that has marked individuality; for another it introduces for acquaintance a group of plants that is almost unknown at the present time; moreover, the rock garden may be used as an accommodating receptacle for small plants or for individual specimens of the lesser plants, more or less difficult to obtain, and which would to a certainty be lost if put into the conventional mixed border. There are other alluring and attractive features which are discussed in the accompanying articles.

The development of such a personal garden completely enthralls those who once begin to taste its joys, but hitherto little information of a sound and practical nature has been available and disappointment is common. Hence the presentation of this symposium by those whose thorough interest and long experience most abundantly qualifies them to speak with authority. M. Correvon was for many years Director of the Jardin d'Acclimatation at Geneva, Switzerland, and enjoyed unique opportunities not only for an acquaintance with the plants in their mountain homes, but also when brought under cultivation and introduced into somewhat different climatic conditions. He enjoys a unique knowledge of their cultural requirements, and his interpretation of the controlling factors must be accepted at its full worth as the conclusions of a painstaking investigator over a period of half a century.

On this side of the ocean no one has devoted more earnest and extended study to the cultivation of mountain plants than Mr. Clarence Lown at his Poughkeepsie garden on the banks of the Hudson River in New York State. Here for perhaps a greater length of time than M. Correvon in Switzerland, has he gathered together and experimented with the Alpine and mountain plants of the world, and what he has to say about the growing conditions is important for the rock gardener in this country.

Mrs. Louise Beebe Wilder is quite familiar to our readers as a capable investigator and enthusiastic interpreter of the joys of personal gardening, and her account of the road to success in introducing these Alpine plants into her garden will be equally helpful to the beginner.

One great lesson to be gathered from all these writings is the supreme importance of raising certain plants from seed in the place where they are to be grown. Further, the observant reader will deduce, as has been pointed out by William Robinson in his writings, that one of the fundamental errors ordinarily besetting the way of the rock gardener is an almost uncontrollable tendency to use enriched soil. The plants will not tolerate it; low fertility and a loose, well-drained soil are the foundations of success. The difficulty of obtaining some of the lesser known plants adds zest to the collector's chase after them; but the beginner will find sufficient kinds for his needs offered by a few progressive dealers who are specializing in the particular field.

I. THE PECULIAR NEEDS OF THE ALPINE PLANTS

HENRI CORREVON

Author of "Les Plantes des Montagnes et des Rochers," and other authoritative books on Alpine flora

WHEN visiting the Swiss Alps, tourists frequently ask: "Will these mountain plants grow at home in the garden?" The answer: "Assuredly they will, if certain precautions be taken."

As long ago as the seventeenth century, Gentiana acaulis, G. lutea, and the Alpine Auricula were cultivated in English gardens, whilst on the continent such flowers were neglected in favor of Tulips and Asiatic Ranunculus, for which there was a craze at that period. The Englishman's and Englishwoman's innate love for gardening and their fancy for picturesque and "natural" gardens, led toward the growing of hardy wild plants which were better able to resist the climate of their island. Thus it is the English who have the most beautiful Alpine rock-gardens and the richest literature about Alpine plants and their culture. "We English," said the late Lord Averbury to me one day, "have a passion for Alpine flowers because they speak to us of a lovely state of Nature rather inhospitable with us at home and of an intensity of light and sunshine rather parsimoniously dealt out to us in England."

In America the taste for Alpines now grows rapidly and I welcome the opportunity THE GARDEN MAGAZINE affords for giving some practical hints on the cultivation of these gems.

Mountain and Alpine Flowers at Home

ON THE world's mountains in every latitude, the regions of snow and glacier shelter a special vegetation known as the Alpine Flora and varying in its component parts, if not in its aspect. This flora is brilliant in color, and graceful and fascinating in form, catching the eye and attention of travelers and constituting one of the foremost attractions of high places.

Upon the European Alps and the mountains of Asia are found the Rhododendrons; upon the Andes, the Fuchsias; upon the Australasian Mountains, the Veronicas; and upon the Caucasus, the Azaleas. These are the flowering shrubs which mark the transition between the herbaceous vegetation and the forest. Whilst in Switzerland the vivid tints of Gentians, Dianthus, Nigritellas, Arnica, and Campanulas attract a multitude of varied insects, elsewhere it is other jewels, belonging to similar or different species but presenting always the characteristics of the Alpine flora, namely: large flowers on short stalks, an abundant and crowded blossoming, a scanty and restrained foliage, and a compact habit often taking the form of dense cushions covered with stemless flowers (as in Androsaces, the Drabas, Azalea procumbens, Eritrichium nanum, Saxifrages, etc.). Dwarf tufts are common to all alpine summits on the five continents.

Travelers visiting Ruwenzori and Kilimanjaro, those Central African peaks which overtop Mont Blanc by more than 3,000 feet, meet with a different vegetation from that of the Swiss Alps, but of the same general aspect; and if we turn to the Arctic and Antarctic regions, everywhere we find a dwarf, close-cropped vegetation—dense tufts covered with more or less brilliant flowers.

I believe that this vegetation can be acclimatized and reproduce itself better in some parts of the American coast line than in Swiss gardens,—wherever sea-air and moisture prevail. Such conditions suit this kind of vegetation better than the drier and more continental climate of Switzerland. On the other hand the absence of snow in certain sections is a cause of weakness in plants accustomed to being snow-covered for a greater or lesser portion of the year. In the northeast sections near the coast and in the northwest where the atmosphere is wet and the air damp, our Alpines should find congenial quarters. In the central states the climate is as bad for them as ours. At the same time,

A TYPE OF ROCKERY THAT DELIGHTS THE COLLECTOR

Ample open space backed by sheltering woods, and numerous hospitable little crannies for the housing of rare species of many sorts

A STRIKING WALL TREATMENT

Silver Cerastium and Scarlet Thyme, Armeria, Saponaria ocymoides, and Sedums combine in happy pictorial effect. Gardens of Mr. Hugh Auchincloss, Newport, R. I.

on account of the need for perfect drainage at the roots it is always well to place the plants either on rock-work, or on thoroughly drained ground, or else upon walls.

In the English horticultural press, more than forty years ago, I recommended that walls be planted with rock-loving plants; and that the delicate kinds, hitherto found impossible to maintain in good health, be planted in perpendicular walls. Those who tried my suggestion met with success, notably Miss Jekyll, who saw an example of this method of cultivation in my garden and championed it.

Conditions Under Which They Thrive

SNOW plays a prominent and influential part in the existence of this highly specialized vegetation. In the icy regions, organized life is ruled by laws very different from those governing nature elsewhere. In my garden at "Floraire" there is snow for scarcely a week or two while upon alpine pastures the winter covering remains until May, June, or even July. In some enclosed mountain valleys, in severe seasons, snow endures throughout several summers and the plants have in consequence no chance of flowering for several years.

Winter in the Alps is naturally very long, and summer correspondingly curtailed; but the snow covering the earth protects it from severe frost and keeps the plants warm. Though apparently asleep they continue slowly the cycle of their life. Upon the Reculet, in the French Jura, I have visited tufts of Soldanella in late autumn, just when the first snow appeared, and again at the end of April, when the snow was disappearing. The plants had not been idle! The buds, invisible in autumn, not only had formed and developed, but the flower-heads had pierced the snow and were expanding their blossoms.

On the mountains, vegetation leaps to life as soon as ever the icy carpet has melted. Under the influence of the south wind, the yellow-brown grass, to all appearances dead, assumes a tender green tint; then come the flowers, and quickly all is gaiety of color. Crocuses, Soldanellas, Gentians, and Primulas soon bejewel the pastures, and the blue sky echoes with their *joie de vivre*. As if by enchantment and in the twinkling of an eye, life is astir on all sides and summer comes without any transition between it and winter. Down on the plains, the periods of transition are long and spring and autumn very important, but on the high mountains they are almost unmarked, vegetation passing rapidly from wintry sleep to all the inducements of summer-time. When Flora awakens she profits at once by days of from twelve to fourteen hours' sunshine and the pure, bright light of the heights. The Alpine plants find themselves suddenly enjoying the same amount of light as the plants of the plains enjoy at mid-summer; and as the sunlight is brighter and stronger at high altitudes, one can conceive why the flowers are more brightly and purely colored. The blossoms, too, are relatively larger because of the diminutive size of the plant itself.

Introducing Them to Cultivation

THE transplantation of Alpines direct from the mountains to our gardens, however natural it may seem, nevertheless presents certain difficulties. The fact that it is at midsummer when the plants are in full growth that they are uprooted and transported to very different conditions, accounts for their reputation of being ungrowable in gardens. They ought to be transplanted during their season of repose; but this is only possible for persons able to recognize the plants when out of flower; moreover, it is the season when the mountains become inhospitable and even dangerous.

At "Floraire" we follow a procedure suggested by good Dame Nature herself, namely, growing from seed. Almost all species of Alpines may be raised from seed which germinates more or less rapidly and, if one knows how to act, always successfully. Seedlings of some species are slow to attain their normal stature

(Rhododendron, Alpine Azalea and, generally, Heaths, Willows, Empetrums, etc.) but for the most part, propagation from seed is sufficiently rapid to compensate for all the needed care and precaution.

Sowing seed in the open ground is not advisable, except where the creation of wild or alpine pasture is sought. If such is the aim, then a mixture of seed of rapidly germinating kinds and species of plants partaking of a similar nature, should be made —I mean, of species capable of growing amicably together, otherwise the more robust choke and kill the feebler growers. I have seen superb results obtained in this way. But, for this, it is imperative to select species of sure and rapid germination as herbaceous Flax, Helianthemums, Aquilegias, certain Primulas, Erysimum Allionii, Centaureas, ornamental Thistles, Eryngium coeruleum and E. planum, Iceland Poppies, Pentstemon, Campanulas, Polemonium, Platycodon, Salvia, Veronicas, Pansies, Silenes, various Galliums, Erigeron, Aster, Erodium, Dianthus, etc. A well composed and harmonized mixture makes a delightful picture, producing changing effects during the whole season.

When the Alpines are of those kinds essentially destined, not for pastures, but for rock-work, walls, or borders, sow the seed in pots or in pans and in coldframes—never in a heated greenhouse. In my volume, "Les Plantes des Montagnes et des Rochers" I give detailed instructions for sowing, for picking out the seedlings, and for their care until time to plant them permanently. In tabloid form, these are as follows:

Prepare a light, sandy soil, just sufficiently nourishing to supply the necessary elements to the baby plants. I use: ⅛ of peat or heather soil; ⅛ of plain, good earth; ⅛ of sand—granitic or limestone, according to the affinity of the plant. Provide thorough drainage in each pot or pan.

In the continental climate it is advisable to place above the drainage a slight layer of sphagnum moss, thus inducing constant and even moisture. For very dry and hot climates, powdered sphagnum added to the soil is beneficial.

If possible, plunge the pots or pans in cinders in a well-ventilated coldframe. If snow should chance to fall, it is well to let it penetrate to the seeds and seedlings.

In sowing the seed, cover it with but little soil, particularly if the seed be fine; and be careful to water lightly, so that the seed be neither washed up nor buried.

It goes without saying that these remarks concern such species as do not germinate easily; they do not concern ordinary herbaceous plants, which, for the most part, may be sown directly in the earth of the border or the frame as Lettuce and Cabbage are sown.

Remember, too, that there are kinds which germinate slowly. This is the case with the Gentians, the Ranunculus, the Umbellifers, the Lilies, and several other families.

As the seedlings commence to gain strength, they must be pricked out; that is to say, they must be separated and planted at a certain distance, one from another. Then, when once they are strong enough to support complete isolation, they must go into thumb-pots, after which the next move is to the open border and the rock-work, or else to larger pots. From that moment they are acclimatized.

Doctor Yersin, Director of the Pasteur Institute in Annam, and famous for having conquered the Plague, has established an Alpine garden at Hon-Ba under the very worst conditions for the culture of high mountain plants. Nevertheless, by sowing seed he has succeeded in raising and cultivating a very fine collection of Alpines, and certain kinds bloom even better than they do in their natural habitats, appearing to be perfectly at home in that tropical climate. Correspondents in New Zealand, Australia, China, Japan, North and South America, and in climates very different from that of Geneva have achieved surprising results.

II. THE LESSONS OF A LIFE-TIME WITH MOUNTAIN PLANTS

CLARENCE LOWN

EDITORS' NOTE:—All the leisure hours of Mr. Lown's long life have been devoted to the collection and growing of Mountain Plants in his garden at Poughkeepsie, N. Y., where the natives of the Rockies stand shouldering those of the European Alps and all thriving together. He is acknowledged as the most experienced American cultivator of this class of plants.

MANY rock gardeners growing the commoner rock plants are getting interested in the Alpines and the rarer rock plants. As some of these gardeners are inexperienced in the treatment of mountain plants, a short chapter as to their requirements may not be amiss.

I had many failures years ago because of my lack of knowledge of their needs as to soil and situation and that others may not suffer undue losses, I am writing this to urge the importance of thorough preparatory work in making the rock garden, particularly as to soil. The structural work is better described in some of the English books—there is no comprehensive American treatise.

A PEEP INTO THE COLLECTOR'S GEM BOX

In Mr. Clarence Lown's garden at Poughkeepsie is to be found the most complete assemblage of choice Alpines on this side of the Atlantic. Mr. Lown and Mrs. Wilder may be seen absorbedly discussing the pros and cons

If ordinary soil is used in the rock garden and no especial pains are taken as to drainage, many of these plants will do beautifully in the early months and the gardener will be delighted with the ease with which they may be grown. But this is somewhat in the nature of a false triumph and a different story is told when real summer comes. The heat is bad enough and if the weather be dry, watering is to be done at evening; then the plants will be fairly comfortable. But it is when we have a spell of hard showers, with heat and humidity that these same plants

suffer. The ground remains soaked around the crown and the leaves do not dry off quickly enough and the result is the damping off of some choice plants. The porous soil advised will in great measure prevent this by giving quick drainage.

A great many of the plants suitable for growing in rockeries will not require any special soil mixture, but all or nearly all will grow well in it and to assure better success, it is advised that the soil mixture be approximately as follows:

3 parts good loam from rotted sods.

2 parts humus. I use swamp muck that has been exposed to weather for two years and become fine. When freshly dug it is lumpy and sour. Wood soil would probably be better but that would be hard to get in sufficient quantity.

2 parts crushed stone such as is used for finishing roads, or fine gravel.

½ part crushed limestone or old mortar; as most rock plants like lime or do not object to it.

This mixture should be not less than 14 inches deep, the deeper the better. This makes a porous soil giving quick drainage, and enabling the plant to root more deeply that it would in a stiffer soil, and so withstanding drought better. The stone in it aids in keeping the soil cool.

Do not forget to give a top dressing of crushed stone or fine gravel around the plants. This serves to keep the crown from getting waterlogged and also keeps the surface of the ground cool.

This mixture is as good as any for a foundation soil and agrees with most of the plants, but, of course, no one stated mixture can be expected to serve for all. Some, the Encrusted Saxifrages, for example, like much more grit; and some like more humus, especially any that grow naturally in woods or partly shaded places.

Experience is the best teacher as to this, but when a plant seems ailing, move it to another situation or change the soil, to which end pockets may be hollowed out and filled with a suitable mixture.

My rock gardens are in sun, but have a little shade during a part of the day from trees far enough away so they do not overhang the gardens. Most of the mountain plants are grateful for this, but they must not be in full shade.

Our winters are generally favorable for the mountain plants. If they freeze up hard early in winter and stay frozen, they will be all right in the spring. But as we are never sure of a snowy winter, which is what they like, it is necessary to cover them to keep sun off and frost in. I use salt hay or leaves, put on lightly, as a heavy covering serves no useful purpose and attracts mice. Evergreen boughs, if obtainable, are very good for this purpose.

It is our summers that are so trying, and after all is said and done, there will ever be some losses in a summer of much heat and humidity. But with pains taken in the preparatory work these losses may be reduced to a minimum.

As to seed sowing—I plant seeds late in December or in January when the weather is so cold that they cannot germinate before spring, using flats 14 x 20 x 4 inches put in a coldframe and allowed to freeze. A light covering of leaves or salt hay is laid over the seeds; then sash is put on and boards over this.

Snow is a valuable aid to germination and it is well to shovel some into the frame in March or to open the frame to a spring snowfall. Many seeds will not germinate well unless planted over the winter and this season, in my experience, is better for many than spring planting. Then, too, the seeds germinate earlier and the plants attain larger size before hot weather comes than if sowing be delayed until spring. When strong enough to prick out, put the seedlings in a frame in not too sunny a place and leave there until they may be transferred to the rock garden.

III. ROCK PLANTS AND ALPINES RAISED FROM SEED

LOUISE B. WILDER

MY OWN experience with growing rock plants and Alpines during the last twelve years has brought me to the conclusion that by far the best way to go about getting together a collection of these delightful little plants is to raise them from seed. Indeed, since the recent quarantine regulations have closed to us the doors of foreign nurseries, and our own establishments have not yet had time in which to rise to the occasion thus summarily thrust upon them, it is about the only way to acquire any considerable number or variety. It is possible to get a fairly good start, however, by gathering plants here and there from the few progressive dealers who carry any.

But apart from the exigencies of the situation, there is no doubt that plants raised from seed at home are apt to be sturdy and easily managed. Those brought from a distance, unless carefully packed, arrive in a state of extreme debility and are often a long time regaining their tone and making up their minds to flourish. Sometimes, also, they are too large to be able easily to accommodate themselves to new conditions, or too small to bear a journey without fatal results. The home-grown plant may be lifted when just the right size to fill the position designed for it, and at the season, at the very hour, indeed, when conditions of soil and weather are exactly suitable. All this greatly minimizes the chance of failure, and when we consider, as well, the gratification of counting them by dozens, hundreds even, another cogent reason in favor of growing them from seed is added.

It is indeed quite a problem to discover any place where any considerable variety of rock garden plants are purchasable, but happily it is becoming increasingly possible to procure seeds of some of our own interesting and beautiful mountain plants, both of the East and of the West, but for the most part we must import the seed of rock plants and Alpines. And let me here explain for the benefit of those who have not done it, that ordering seed from abroad is a very simple matter. It entails merely a post office order for the amount due enclosed with the seed order. There is no duty on seed, and in about a month from the time the order is dispatched a fat package—it is always fat—of entrancing possibilities arrives.

Seed is commonly offered in the early spring. This, of course, has been gathered the previous season and has suffered some loss of vitality, making germination less certain, at any rate slower than if we could have it just freshly gathered. But plants differ greatly in this respect, some retaining their vitality much longer than others and, as it is seldom possible to procure perfectly fresh seed, we must make the best of conditions, ordering our seed as soon as the catalogues reach us, and getting it into the ground expeditiously after it arrives.

MY MANY mistakes and experiments with growing this class of plants have resulted in a method of procedure which, while extremely simple, is productive of very satisfactory results. To begin with, a coldframe is a prime necessity and is best placed, if possible, where it receives the morning sun only. It is well to have more than one section of frame, for once the pleasure and profit of raising rock plants from seed is fully realized, a single section proves entirely inadequate—with twelve I feel my enthusiasms to be cruelly cramped! The frames used by me are a little out of the ordinary in that they are miniature—only two and a half feet by three feet. This smallness I find of great advantage, for it enables me to reach all parts of the frame with ease, thus greatly simplifying operations con-

nected therewith. The frames extend along a picket fence; the glass is hinged to the back of the frame and, when not required, may be raised and fastened to the fence by means of hooks and eyes. Thus lifting and moving the heavy lights is entirely obviated.

The soil is very carefully prepared, for the seed is sown directly in the frames, instead of in pots and pans as is generally recommended. This saves several operations and, in my experience, has proved a more satisfactory method. The bottom of the frame is lined with several inches of broken stone to insure free drainage; next comes a layer of rotted sods and upon this six or eight inches of very fine soil, one half sand, the other composed of one part good loam from the garden and one part leaf-mold, natural or commercial. The surface is made perfectly level and a few hours before seed is sown the soil is watered by means of a very fine spray.

A narrow plank (an inch or so wide, cut to fit the depth of the frame) lightly pressed upon the surface at intervals of three inches serves to firm the soil where the seed is to be sown. This should be very thinly scattered, and over it sifted a light covering of soil—almost pure sand. Extremely fine seed requires but the merest dusting of sand, larger kinds will need a little more. Each line should be clearly labeled. When the soil has been moistened before sowing, the freshly sown seed will not require to be watered.

The sash are placed closely over the frames until the seed germinates and squares of matting used to exclude the light. Seed of many of these plants germinates very slowly, and discouragement should not be felt if weeks go by without the cheering appearance of little green backs heaving through the soil.

Pinks, Alyssums, Aubrietias, Silenes, Arabis, Armerias, Corydalis, Arenarias make their appearance, as a rule, quite smartly, that is in about ten days, but the choice little Campanulas are apt to be slow; and Anemones, Gentians, Primulas, Irises, Androsaces, Ramondia, Meconopsis may sorely try one's faith by remaining dormant from three months to a year or two. These very slow ones it is best to place in a frame to themselves so that they can be left in peace and not disturbed by the removal of earlier rising plants.

As soon as there are signs of germination the lights are propped up several inches to give free ventilation, and the mats replaced by light screens made of lath fastened two inches apart to top and bottom pieces. These are made to fit the frame sections. As warm weather becomes settled the lights are raised entirely, but the lath screens remain to protect the little plants from the direct rays of the sun and the full force of the summer showers.

WATERING must at all times be done with the greatest care. Indeed one thoughtless soaking may cause the loss of a whole season's hopes. At no time must the soil be allowed to dry out, for this spells catastrophe to the tiny plants; but neither must it at any time be over-wet, or the dread fungus known as "damping off" will result.

Moreover, only the finest spray must be turned upon the frames because the seed is in most cases so small that it is easily washed from the soil, and the little plants themselves so fragile as to be beaten down and injured by any but a light application. The spray from an ordinary watering can is too heavy and a hose must never be used. The ideal implement is a long-nosed English can with a fine rose spray. With this the plants are showered with a delicate mist, vastly refreshing, and in no wise dangerous to their fragile limbs, nor likely to over soak the soil.

When the plants are large enough to be easily handled, they are transplanted into small beds especially prepared for them near the frames. These are raised a few inches and the soil is composed of about one part loam from the garden and one part sand and small stone chips such as are used to top-dress roads. Here the small tufts and rosettes and trailers remain until they are of a proper size to take their places in the colony of the rock garden. The lath screens are used to protect them from too much sun and from the beating of heavy rains, and in very hot weather the mats are also used to provide a comforting shadow.

Plants that form tiny tufts, developing slowly—Armeria caespitosa, Silene acaulis, many of the Saxifrages, for example—with any others that, through slow germination or late planting, are not of a size to be exposed to the chances of winter out-of-doors are allowed to remain in the frames. In wintering these plants in the frames it must be remembered that one is not protecting them from cold so much as from the possibilities of mischance generally. Here a light covering of leaves is scattered over them when freezing weather sets in. The glass is usually lowered about the first of November, but never closely even in the severest weather, for fresh air is the very breath of life to these little mountaineers.

The following is a list of Alpines and rock plants that may very easily be raised from seed. If the list is too long, those indicated by the asterisk I recommend as very promising for a beginner, and many of them are purchasable as plants.

Achillea argentea, Clavennae, serbica*.
Aethionema grandiflorum, coridifolium, pulchellum*.
Alyssum saxatile citrinum*, montanum.
Androsace sarmentosa.
Anthemis aizoon, montana*.
Aquilegia alpina, coerulea*, Helenae.
Arabis alpina rosea*, aubrietioides.
Arenaria caespitosa, montana*.
Armeria alpina*, caespitosa, maritima, setacea*.
Aubrietia, many vars*.
Campanula barbata*, carpatica, collina, garganica, mirabilis, muralis, pusilla*, Tommasiniana.
Cerastium tomentosum.
Cheiranthus Allioni*, linifolius.
Corydalis lutea, cheilanthifolia, ochroleuca*.
Crucianella stylosa.
Dianthus arenarius*, brevicaulis, caesius*, deltoides*, gallicus, graniticus, monspessulanus, neglectus, sylvestris*.
Draba aizoides*.
Erigeron mucronatus.
Erinus alpinus*.
Erodium cheilanthifolium.
Erysimum pulchellum*.
Geranium argenteum, cinereum*, grandiflorum*, Endressi, Wallichianum.
Geum montanum.
Gypsophila repens*.
Helianthemum, many vars.
Houstonia coerulea.
Iberis sempervirens.
Iris arenaria, many other vars.
Lavendula, dwarf.
Linaria alpina.
Linum alpinum*, salsoloides.
Lychnis alpina*.
Myosotis Ruth Fischer*, rupicola.
Oenothera pumila.
Papaver alpinum, nudicaule*, caucasicum, rupifragum*.
Polemonium humile, Richardsoni*.
Potentilla calabra.
Primula denticulata*.
Saponaria ocymoides.
Silene acaulis, alpestris*, Schafta.
Symphyandra Hofmanni.
Saxifraga, mossy vars.
Stachys corsica.
Sedum, many vars.
Sempervivum, many vars.
Thalictrum minus.
Tunica saxifraga.
Viola cornuta*, gracilis, nigra.

AUTOMOTIVE CULTIVATORS
for the Modern Garden

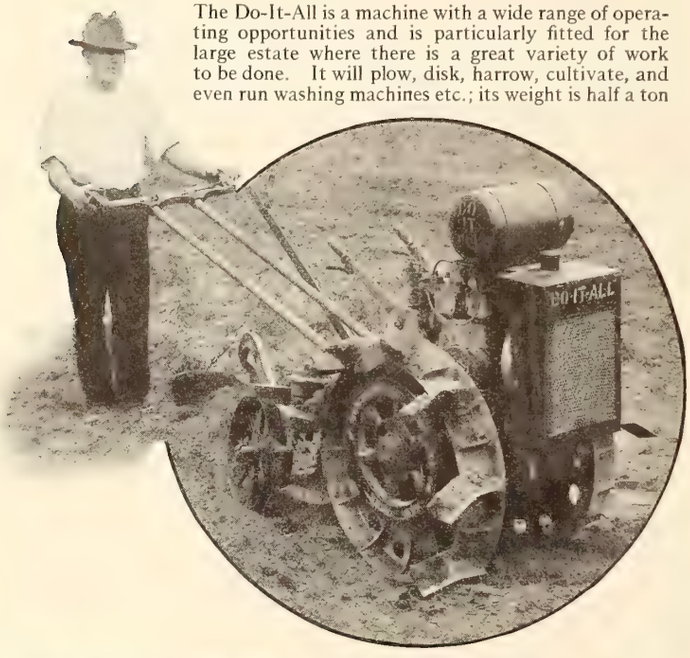
THE immediate appreciation of the gasoline-driven tractor in agriculture naturally gave birth to the thought of applying the same principle to the more intimate areas of the garden. This idea has borne fruit in a score of developments of which some typical illustrations are given herewith.

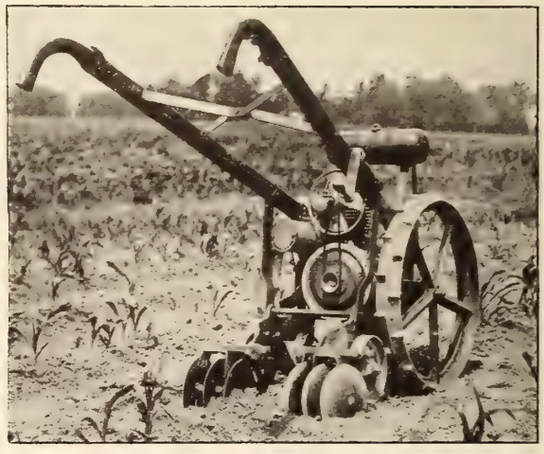
The self-propelled tool develops a power far in excess of any hand-operated appliance; and though, of course, its economical use has direct relation to the size of the plot, there is also the, perhaps, even greater factor of convenience. Most garden owners to-day know something of the internal combustion engine and the application of this knowledge to the tillage of the soil does not introduce a new complication into the problems of the home gardener but, on the contrary, may effectively simplify them.

The automotive cultivator is as easily operated as your automobile and soon justifies its initial cost by doing the job more quickly and thoroughly than is possible by hand, with the rather conclusive advantage of being always dependably "on tap," as it were, a merit not despised by those who have suffered from the elusive instability frequently characterizing "the hired man."

The Macultivator is noteworthy for compactness of construction; it has a clearance of 9 inches, being 17 inches over-all in width. It is not intended as a plow, but will cover more ground in less time with smaller expenditure of motive power than most similar tools

The Do-It-All is a machine with a wide range of operating opportunities and is particularly fitted for the large estate where there is a great variety of work to be done. It will plow, disk, harrow, cultivate, and even run washing machines etc.; its weight is half a ton





The Acme-Jr is one of the most powerful of the smaller machines and as nearly devoid of vibration as any light weight engine can be. Traction on any soil; will turn 4 in. sod as easily as a rake will break a $\frac{1}{4}$ in. crust

The New Britain is a many-purpose tool, economical in operation; besides cultivating it operates practical multiple row seeders, weeders, etc.

The Beeman blazed the trail and has stood the test of time—a rare combination of qualities!

WHAT, WHY and HOW MUCH FRUIT to PLANT

JOHN L. DOAN
School of Horticulture for Women, Ambler, Pa.

This Year's Opportunities and Possibilities Measured by the Family Needs and Available Space

EDITORS' NOTE: Taken in conjunction with the article on flower seeds elsewhere in this issue, and with that on vegetables in January we have a trio of practical, elemental articles that enable the veriest tyro in gardening to start the year's work with an intelligent understanding of his actual needs and the ways to satisfy them. The summarized facts and data of yields etc. also hold matter of moment for the advanced gardener. These preliminary articles will be followed in season by specialized topics and discussions of particular crops. The average home garden is notoriously deficient in fruit, perhaps because of a subconscious thought that fruits for current needs can always be bought. They can, of a kind, but not the kind that a gardener can grow for himself. Apart from the matter of intrinsic quality and state of maturity it must be recognized that good fruit is becoming less and less easy to obtain at reasonable prices and that this deficiency of an acknowledged essential in the dietary must be supplied at home. Subsequent articles by Mr. Doan will discuss individual fruits, Strawberries coming in March.

THE business man, considering an applicant for a position, asks: "What can he do? How much would he be worth to my enterprise?" Equally the garden owner considering the desire to plant a fruit garden, may well ask himself: "What can it do? How much will it be worth to my family and myself? Will it pay?"

When compelled to purchase all the fruit desired by the family, the cost, as a rule, greatly restricts the use of one constituent of the dietary that has recognized therapeutic value. In fact, the absence of an adequate fruit diet reacts injuriously on the individual. When Strawberries must be bought at a fancy price for a shortcake, they are likely to be, quantitatively, its shortest ingredient. If, however, the garden has an abundant supply of this excellent fruit, shortcake can be had twice as often and will be twice as good. With fruit growing in abundance on your own grounds, the family is no longer merely tantalized by a taste of it in season, but is satisfied by a generous supply, not only in season, but all the year round; for it may be canned, evaporated, preserved, or made into jam, jelly, marmalade, etc. to reappear upon the table in countless appetizing forms.

Fresh and Gathered at the Right Stage

MOST of the fruit offered for sale has been shipped from producing centres frequently at a great distance; it must have been gathered before fully ripe, and has been a considerable time "on the road." This means that perishable fruits cannot have the mellowness, freshness, and high quality possible when gathered at the best picking stage and served the same day. If you have ever made a comparison of shipped and home grown perishable fruits, need anything more be said?

The commercial fruit grower is running a business enterprise to pay the largest dividends. Vigor and productiveness of the variety, and attractive appearance, large size, and good shipping and keeping quality of the fruit, are perforce put ahead of excellence. Rarely is the most healthy and productive variety also of the highest quality. In a majority of cases the most showy fruits are not the best, for the very characteristics that make a perishable fruit ship or keep exceptionally well are likely to lower its quality. A familiar example of an inferior but attractive fruit is the Ben Davis Apple. In the regions well adapted to it, it is almost an ideal variety in every respect, except quality. But as "most people taste with their eyes," the mere appearance of this apple with no quality back of it, made it a good seller for many years. The Ohio Raspberry is one of the seediest and poorest in quality of the black varieties, yet, where Raspberries are grown for evaporating, this seediness, which means a less loss of weight in the process, makes it one of the most profitable varieties to grow *for that purpose!*

Some of the best quality fruits are tardy or poor bearers; and some are lacking in health and vigor and require special care. The Late Crawford Peach, one of our best, cannot pay the orchardist as well as Elberta, unless he gets about three times as much per bushel for it. The Roxbury Russet and Esopus Spitzenburg Apples are so exacting that very few orchardists outside of certain favored regions try to grow these apples for the general market, although they sell at high prices.

The sure way to have the choicest varieties is to grow them for oneself. A few may be too exacting for any except the most skilled to essay; but unless the climate and soil be definitely unfavorable, many varieties of excellent quality, reasonably healthy and productive may be grown successfully.

A Fascinating Game

PLANTING and the care of or oversight of berry plants, vines, or trees, from the time when the ground is prepared for setting them out until the fruit is on the table, is in itself a fascinating game.

There is need of training to give them the desired forms and fruitfulness. It is interesting to watch how nipping here and pinching there may direct the energy of growth into the part where it is most needed; how light or severe pruning during the dormant season may bring about desired results. Each kind of tree or bush has its own habits of growth and bearing; different varieties of the same kind have their peculiarities; and each single plant, like each human being, has individual traits.

Consider Area and Preferences

THE available area greatly influences the choice of kinds of fruit to be planted and the amount of each. An acre of suitable ground should supply a large family abundantly with all the common fruits throughout the year, and in most years should leave a large surplus. (Such a planting is discussed and illustrated in THE GARDEN MAGAZINE for January, 1921). A half-acre fruit garden in full bearing should more than supply the current wants of a large family throughout the year in a majority of seasons. Even a few square rods, well used, will go far toward furnishing an ample supply of small fruits and grapes in season. If only two or three square rods be available, it is still well worth while to have a fruit garden.

Site and Soil

THE site of the fruit garden should not be lower than the surrounding land and the soil must be well drained either naturally or artificially. Different kinds of fruits have their preferences as to soil, of course; but reasonably good results may be obtained from most of them on the same land, if the right care be given.

Do not plant Strawberries on newly broken sod, because of the danger of attack by grub worms. They should be preceded by at least one, and preferably two, cultivated crops.

Though it is desirable that sod ground be cultivated a year before any fruits are planted on it, yet satisfactory results may usually be obtained on broken sod that has been thoroughly prepared, if the trees are properly planted and given good after attention.

BECAUSE appetites and preferences vary so much; and as climate, soil, care, and the variety of the fruit so greatly influence the yield, it is impossible to do more than vaguely suggest the amount of each kind of fruit to be planted in order to meet the needs of a given number of persons, yet the following estimate of results that may reasonably be expected, under favorable conditions with good care, will give a basis for judgment.

Table of Approximate Fair Yields of Fruits

SMALL AND VINE FRUITS

Kind of Fruit	*Yield per 10 Ft. of Row*	*Distance between Rows Center to Center*
Everbearing Strawberries	2 qts.	3 ft.
Common Strawberries	5 qts.	4 ft.
Red Raspberries	5 pts.	6 ft.
Black Raspberries	7 pts.	7 ft.
Blackberries	9 pts.	8 ft.
Dewberries	1 to 3 qts.	6 ft.
Currants	6 qts.	5 ft.
Gooseberries	6 to 9 qts.	5 ft.
Grapes	10 to 18 lbs.	9 ft.

TREE FRUITS

Kind of Fruit	*Yield per Tree*	*Distance between Trees*
Apple	10 to 25 bu.	30 x 30 to 40 x 40
Pear	3 to 15 bu.	20 x 20 to 30 x 30
Quince	1 to 4 bu.	15 x 15
Peach	3 to 10 bu.	20 x 20
Plum	2 to 8 bu.	15 x 15 to 20 x 20
Cherry (Sour)	5 to 25 gal.	18 x 18 to 22 x 22
Cherry (Sweet)	5 to 30 gal.	25 x 25 to 30 x 30

Bearing Ages of the Fruits

IT IS important to have some idea of the ages at which the fruits begin to bear and at which they yield abundantly. Among the tree fruits, soil and climatic conditions and varietal characteristics cause these times to vary greatly for the same kind of fruit. The following data, however, may be helpful.

SMALL AND VINE FRUITS

Kind	*First Bearing*	*Abundant Bearing Begins*
Everbearing Strawberries	Latter part of 1st. year	1st or 2nd year
Common Strawberries	2nd year	2nd or 3rd year
Black Raspberries	2nd year	3rd year
Red Raspberries	2nd year	3rd year
Blackberries	2nd year	3rd year
Dewberries	2nd year	3rd year
Grapes	3rd year	4th to 5th year

TREE FRUITS

Kind	*First Bearing*	*Abundant Bearing Begins*
Apples	4th to 8th year	10th to 15th year
Pears	3rd to 8th year	8th to 15th year
Quinces	2nd to 3rd year	5th to 7th year
Sour Cherries	2nd to 4th year	6th to 9th year
Sweet Cherries	4th to 7th year	8th to 12th year
Peaches	2nd year	4th to 5th year
Plums	3rd to 7th year	5th to 12th year

Areas for Small Fruits and Grapes

IF THERE is not sufficient space for a complete fruit garden, the most satisfactory course to follow is to provide first for a supply of the most perishable of the desired fruits, as it is easier to buy the other kinds in good condition. Three square rods (about 800 square feet) should yield an abundant supply of the common Strawberries, in season and for putting up. There is considerable danger of crop failure of the Everbearing Strawberries through drought; but, with favorable weather conditions, or with irrigation, two square rods (about 550 square feet) should yield an ample supply from early August until killing frosts. A dozen Currant bushes, occupying a little more than a square rod (say 300 square feet), should yield a bountiful supply for the year. Gooseberry bushes produce even more abundantly. Ten square rods (about 2700 square feet) of Red Raspberries should provide an ample supply for the year. In many places Everbearing Red Raspberries give satisfaction; and, where they do well, may be planted instead of the early summer varieties, if preferred. Somewhat smaller areas of Black Raspberries and Blackberries should yield abundant supplies of those fruits. Dewberries are more exacting in soil requirements, and—unless the soil be sandy or gravelly, or a sandy or gravelly loam—may well be omitted as there is now a hybrid Blackberry that is more productive, adaptable, and reliable, as well as equally good and early. Twenty Grape vines, occupying a little more than five square rods (1440 square feet), will supply the family table from the time when the Delaware and Moore Early varieties ripen for as long as the fresh fruit may be kept, besides leaving considerable surplus for grape juice.

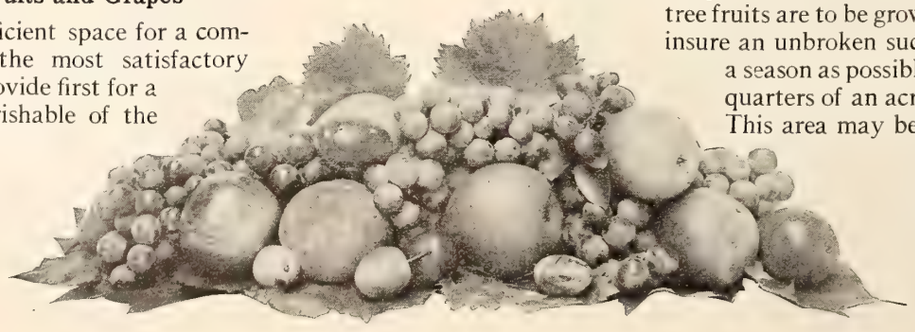
The small fruit season opens with the Strawberries, usually before the middle of June in the latitude of New York City; the latest varieties being succeeded without a break, by Raspberries, Gooseberries and Currants, followed by Dewberries. Before the season of most of these is over, Blackberries are ripening. Everbearing Red Raspberries and Strawberries succeed these and continue in bearing until hard frosts.

In most years less than a quarter of an acre should provide an abundance of small fruits and grapes for the entire fruit supply of an average sized family, from strawberry time until frost. It should also supply most of the canned fruit, jams, jellies, etc., for the remainder of the year, if desired, with frequently a surplus after these demands have been met.

Tree Fruits

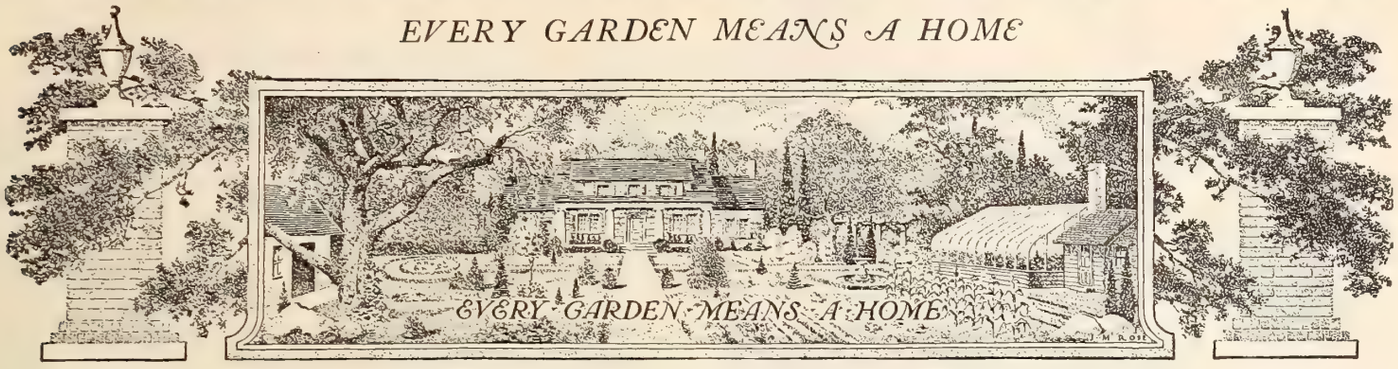
MOST families attempting any sort of fruit garden will wish to include one or several tree fruits. Sweet and Sour Cherries begin ripening almost with the Strawberries, and continue bearing for five or six weeks. Our earliest Plums start to ripen a few days after the cherry season closes and the latest varieties are not gone until October. Apples commence ripening with the Plums, and those who have cold storage facilities within reach, may enjoy home grown apples the year round. Pears come in a few days behind apples and their season may last until winter. Peaches of good quality begin to ripen within two weeks of the end of the cherry season and continue into October.

To have varieties of these tree fruits ripening in succession usually means a large surplus of fruit, unless one tree be top-worked to two or more varieties, when a single tree will sometimes produce a supply ample for the year. The tree fruits also lessen the quantity of the small fruits used. But, with neighbors who appreciate the superiority of home grown fruits of varieties that excel in quality, the larger the surplus the greater the profit it should bring. If all of the kinds of tree fruits are to be grown in sufficient variety to insure an unbroken succession through as long a season as possible, between half and three quarters of an acre of land will be needed. This area may be reduced about one half by choosing fewer varieties or by working two or more varieties on the same tree.



AMONG OUR GARDEN NEIGHBORS

EVERY GARDEN MEANS A HOME



JACK FROST NOT SO BAD AS HE IS PAINTED

UPSETTING cherished popular notions is inevitable as truth becomes uncovered, although to be sure many beliefs in "what isn't so" die hard—they have the vigor of age! The latest exploded theory has to do with the effect of cold upon plant life. It has been accepted that frost is the arch enemy of the garden and that but for the winter cold we would have flowers, and fruits, and verdant vegetation all the year round. Now the scientists tell us that Jack Frost is, in the main, a beneficent old fellow. It is admitted that if he comes too early, or stays too late, his visit is likely to prove embarrassing. Yet if he did not come at all—which means if we did not have any cold weather—the majority of plants in the temperate zone would show little, if any, growth in the spring. It is hard to believe that the effect of cold is to stimulate rather than to retard plant growth, but that is what actually happens so we are now informed.

One fact standing out clearly in the recent experiments of Dr. Colville of the Dept. of Agriculture is that the dormant condition of certain plants in winter is not the result of cold and freezing; on the other hand, *cold stimulates the revival of life in the plant when spring comes.* Such conception of the effect of cold is new to the everyday reader, who is used to looking upon winter temperatures as forcing the shrub into a dormant state scarcely better than death. But healthy, husky Blueberries which were in a government greenhouse "went to sleep" just the same, despite the fact that the air was kept at a growing temperature.

The shrubs, it is true, did not go to bed so early as when Jack Frost used to hurry them off, but go to sleep they did. Their leaves dropped off, and in the warm greenhouse the plants went into a dormant condition exactly like that of others outside in the cold and snow. Moreover, they were late in waking when spring came. Some, indeed, slept through the whole year. The inference is that the plant's period of dormancy is a seasonal matter not induced by the cold, but that the early and luxuriant growth cannot occur unless the plant has been through a period of chill temperature.

TWO interesting experiments were conducted with Blueberry plants. In the middle of February, a Blueberry which had shed its leaves and become dormant in a warm greenhouse, maintained at a temperature of 70 degrees, was repotted and set in the south end of the greenhouse. A small opening was made in the glass, through which one of the two stems of the plant was thrust, the open space about the stem where it passed through the glass being carefully plugged. During the rest of the winter the plant was kept in the same position, the pot and one stem remaining inside in the warmth, while the other stem, projecting through the glass, was exposed to the rigors of winter outside. About the middle of April the *outdoor* branch (which had been frozen) started into normal growth, while the *indoor* branch (kept continuously warm) continued dormant.

Another plant was set on a shelf *outside* the greenhouse and a single branch run through the glass into the warm interior. When spring came the interior branch remained dormant, all the outside branches leafing promptly. Evidently the causes that stimulated growth in the exposed stems operated in the stem itself, not in the roots. The theory is that cold weakens the plant cells, and by partial destruction turns the starch to sugar.

The importance of this chilling to those trees and shrubs which are subjected each year to several months of freezing weather becomes obvious. If so constituted as to start into growth as easily in the warm days of late fall as in those of early spring, many species would come into flower and leaf in the mild autumn spells of "Indian summer," and the stored food required for the plant's normal vigorous growth in the following spring would be wasted in a burst of new autumn growth, to be killed by the first heavy freezes. But when two or three months of chilling are necessary before a newly dormant plant will respond to the usual effect of warmth, such plants are protected against the dangers of growth in "Indian summer." It is probable that all our native trees and shrubs are thus protected.

A SIMPLE and instructive experiment may be made in the fall and winter with such early spring-blooming plants as Alder, Hazelnut, Pussy-willow, Jasmine, Forsythia, Japanese Quince, Peach, Plum, etc. Brought into the living room and set in water in mid-autumn freshly cut, dormant leafless branches of these plants will not bloom; but branches cut at later dates will respond and flower though not, however, until the expiration of the chilling period appropriate to each kind.

In the tropics where there is no chilling weather, such as we know it here, trees and shrubs spring into growth after the dormant period of the dry season just as they do in temperate climes after the dormant period of winter. There are agencies other than chilling which will start dormant trees and shrubs into growth even in our own latitude.

Pruning a long dormant plant will often start it into growth. Girdling produces a similar result. Notching the stem does the same. Rubbing the stem may also start the plant into growth. In all these examples of the stimulation of growth by injury it is conceived that the enzym, or soluble ferment which is found in all plants and which transforms starch into sugar, is brought into contact with the starch as a direct result of the breaking and straining of the cells, thus causing sugar to be formed and growth to begin. Tropical plants probably have various methods of coming out of their dormancy, and there is every reason to expect that some

SHOWING THE BENEFIT OF A LONG FREEZE

This Blueberry plant was kept throughout the winter inside a greenhouse where temperature was maintained at 70 degrees. About the middle of February, when the plant had shed its leaves and become dormant, the branches on the right were let out through a small opening carefully plugged to protect the rest of the plant from any chill outside air. These branches, after being exposed to the rigors of winter, showed this vigorous leafage on May 20th, whereas the branch (on left) which had been kept warm and undisturbed within the greenhouse during the same period still remained dormant

of them will be found to accomplish this act in the same way as our long dormant greenhouse plants, by the weakening of their cell membranes. This is in effect substantially identical with chilling.

MARCH'S FLOWER SHOW

THE horticulturist's Mecca this spring will be Cleveland, Ohio, where the National Flower Show opens March 25th and continues to April 1st. At the time this is written (in January) it is not possible to give any particulars, but the dates can be noted and plans made accordingly. The local associations and the Garden Club of America lend their coöperation in making this gathering as fully representative as is possible.

The annual New York Show is fixed for March 13th to 19th, and, as it has become firmly established as the great annual gathering of the East, it invites attention from gardeners everywhere.

The child gardeners of New York's East Side will be represented at the Flower Show to be held at the Grand Central Palace March 13th to 19th by a sample garden of the same size as those alloted to each child at the Avenue A Gardens referred to in our January issue. This and other exhibits from the same source will give the public a graphic idea of the physical and mental benefit to children wrought by this very practical charity, which is not all charity, and which will be more fully described in the next issue of The Garden Magazine.

THE OPEN COLUMN

Readers' Interchange of Experience and Comment

Echoes from the Pacific Coast

To the Editor of The Garden Magazine:

YOUR Pacific Coast Annual for 1921 is splendid—esthetically, artistically, and culturally. I am delighted to see, in our periodical marts, in our public conveyances, and, best of all, in our homes such striking evidence of the popularity of your publication in California.—E. J. Wickson (*Professor Emeritus of Horticulture*), *University of California.*

It Came at Christmas, Too!

To the Editor of The Garden Magazine:

IN RENEWING my subscription I would particularly like to begin with the December number. I am an old subscriber and for some years yours has been a constant and a favorite magazine in my home. For a little time, however, enforced moving about prevented my seeing it regularly; now I am settled in my parents' home and am again taking up the old favorites. This week a friend sent me the June number devoted to Iris and as I have 180 varieties of Iris, you will see it was a treat to me! From now on I hope to read and enjoy your best of all garden magazines.—(Mrs.) Jennie Farmer, *Salem, Ill.*

Some Perennial Questions

To the Editor of The Garden Magazine:

THE red spider has for three years ruined my once so beautiful perennial Phlox. Can some one tell me a remedy or will these plants always be so troubled? Don't say "spray"—I've no time for that.

Also will some one give me names of perennials that bloom in July? Dreer names several such, but with me they bloom in June and I have almost nothing for July.—Cora Jewell, *Darlington, Ind.*

—The ever old, ever new, perennial question, and answered perennially, too, the most recent occasion being The Garden Magazine, September, 1921, page 48. It crops up each year and because in spring the garden is planted with thoughts of spring—a fruitful, futile philosophy alas!—Ed.

The Spirit and the Letter

To the Editor of The Garden Magazine:

I WANT to express the appreciation that such a "humanly" written article as "When Plants are Brought Indoors" (November, 1921, page 157) is bound to inspire. The theme throughout sounds a responsive note in the spirit of the reader, not only leaving one more thoroughly familiar with the working habits of the plants, but with an axiomatically heightened interest in the plant life around them. Theodore Roosevelt said: "Personally the books by which I have profited infinitely more than by any others have been those in which profit was a by-product of the pleasure; that is, I read them because I enjoyed them, because I liked reading them and the profit came in as a part of the enjoyment."—L. Vinton Richard, *N. Y.*

From Rome to Texas

To the Editor of The Garden Magazine:

ON PAGE 104 of the October number is a letter from a Texas reader asking for suggestions. Perhaps some things which do well in Rome would help her, for while our winters are colder, our summers are long and dry, with hot winds, and anything like Pansies or Delphiniums die in June. I have found Roses best of all. If one plants them well, and above all firmly—stamping the earth on the roots with both feet—then looks out for them the first summer with occasional deep waterings, they generally stand heat and wind. Some years may be so bad that October first finds all their leaves off, but they recover in the autumn rains. The Tea Roses, the Pernetianas, the Noisettes, the lovely single Roses, and the Hybrid Chinas all do especially well. After Roses come Iris; the beautiful I. pallida family grow and spread, white I. Susiana and the newer Regelio-Cyclus hybrids (which are so difficult to grow in England and moist climates) flourish like weeds. For annuals, Zinnias stand a great deal of drought, and if one buys the seed carefully, avoiding the orange and red and magenta tones, they can be very handsome. Antirrhinums are perhaps the best of all, and flower some eight or nine months of the year—here, too, picked colors are best. Valerian, both white and red, is lovely; and, if watered, Petunias are very heat-defying. The Christmas flowering Sweet-peas, if planted in the autumn, are generally able to flower in the spring before heat

comes. But Roses are the best of all—certain late varieties like Mermaid, Ophirie, Alba odorata, Hiawatha, Mme. Alfred Carriere sometimes have blooms until July, and, all but Hiawatha, begin again in late September.—An Italian Reader, *Rome, Italy.*

Plants that Don't "Come True"

To the Editor of The Garden Magazine:

THE article by J. L. Collins in the November number recalls the peculiar conduct of a Dahlia plant in my garden a few years ago. It was supposed to be Lindhurst, but it bore on one stem two full, large blooms that were alike in form and size but not in color for one was a solid, rich red and the other a bright yellow except for one little red mark on one petal. Another case, strange to me, was that of a Balsam plant given me by a friend. I had only the one plant and, so far as I could learn, there was not another in any garden near by. I saved seed from this plant whose blossoms were red and this seed, sown the following spring, produced four different shades: a pure white, a flesh pink, and two reds, one light, the other dark. These cases may interest the other readers of The Garden Magazine.—Frank M. Bingham, *Decatur, Michigan.*

—It was to be expected that the Balsam would not "come true"—as is the case with the vast majority of garden varieties of selected strains of flowers. Only under carefully controlled conditions can they be bred true—see the reference to Double Cosmos on p. 296 this issue.

Pole Limas That Rival Jack's Beanstalk

To the Editor of The Garden Magazine:

THE pole Limas here pictured are worthy rivals of the proverbial beanstalk of Jack. These Beans, variety early Leviathan, were grown by Frank J. Fedder at Dansville, N. Y., and bore a heavy crop from the ground to the top of the tallest pole, which, before erecting, measured twenty-two feet long.

They were sown May 30th and reached the tops of the poles about July 20th. The first mess of beans was picked the last week in July, and the vines were still bearing strongly on September 18th when this photograph was taken.

This result is due to striving for many years on Brother Frank's part to provide poles tall enough to satisfy his most ambitious Lima; and every season he has provided taller ones until this year when he felt he had surely reached the limit. But the Beans, favored by unusually warm weather, not only reached the top but came back down again four or five feet more. No fertilizer was used to force them, but they were given at all times an abundance of water. As a basis of comparison, Mr. Fedder is 6 ft. 2 in. tall and the ladder beside him 9 ft.

He has wonderful success likewise with the balance of his small but intensively productive garden in which he takes great pride and from which (as a true gardener should) he derives much pleasure.—Raymond L. Fedder, *Dansville, N. Y.*

The Idiosyncrasies of the Rabbit

To the Editor of The Garden Magazine:

WHO can account for the peculiar depredations of rabbits? Are they spiteful in that they often destroy but do not consume their prey? In the fall they are apt to injure any recently transplanted material which they would not injure if left undisturbed.

On several occasions in the fall I have transplanted to my garden from a near-by wood young Hawthorns and, unless protected, they are girdled by rabbits during the early winter, while similar plants in the woodland on my grounds remain untouched. Early in the autumn I planted some small Lilacs—choice varieties—but neglected to protect them; by the middle of December they were cut back to within six inches of the ground. Near by were plenty of small sucker plants at the base of their parents just as tender and juicy as my pet plants that were not "sampled" or cut for food. Was it mere cussedness on the part of the rabbit? Every fall I transplant some Rudbeckia triloba, a biennial retaining its foliage during the winter—if allowed to! However, unless covered with strawy manure, it will be eaten by rabbits who do not touch undisturbed plants only ten feet away.

Some seasons they seem to have a grudge against some particular plant and take delight in de-flowering its blooms as soon as they appear. Last summer they chose a planting of yellow Violas having Sanvitalia procumbens for a centre. They seemed not to have discovered it until about the first of July when the bed was a sheet of color; or, discovering it, did they want me to see what a glorious sight they could deprive me of? At any rate they then commenced their nocturnal depredations and no blooms were seen thereafter. The same plants in other parts of the grounds were untouched.

HAVE YOU EVER SEEN ANY TALLER?

Pole Limas (variety Leviathan) more than 20 ft. high; sown May 30th, they reached the top of the poles about July 20th; first mess of beans picked the end of July and vines still bearing strongly on September 18th when this photograph was taken; no fertilizer used to force but water plenty and often. How about it, neighbors? Shall we take off our hats to Mr. Frank J. Fedder, of Dansville, N. Y.?

Two years ago their tastes apparently did not run to Violas as my plantings were ignored; the fancy that year was for groups of hybrid Verbenas—an entire absence of bloom during the summer being the result of their nocturnal sprees.

I expect some one will suggest that I put salt on their tails and catch them—I tried that some seventy odd years ago, but it didn't work—their tails weren't long enough!—W. C. Egan, *Highland Park, Ill.*

What Lime Will Do for Your Grape Vines

To the Editor of The Garden Magazine:

IT IS pretty generally known that the great virtue in lime does not consist in its own fertilizing power but rather in its potency to liberate, through certain chemical action, other fertilizing elements in the soil. Ordinary earth is, essentially, far richer than we suppose; but its powers to stimulate growth are not always available; and they decrease naturally as plants draw upon them for development.

Until recently I had not known of the marvelous power of sweet lime on Grape vines. A friend living near by has a vineyard of several acres which, during the winter of 1921, he liberally limed. The liming was not done broadcast but about two or three pounds of pulverized sweet lime were applied at the roots of each vine, and then raked carefully into the top-soil. This was done during a dry spell when the top-earth was mellow. The raking in was so thorough that the lime and the soil, for a distance of three feet from the foot of each vine, in every direction, were perfectly mixed. No other fertilizer of any kind was used.

Last year was a poor year for Grapes in this section; many vines had none and others bore an indifferent and ragged crop. My friend,

however, harvested the largest and finest crop he had ever had. His vines bore prodigiously; and I have never seen finer bunches of Concords, Niagaras, and Delawares. His fruit was a triumph when that of others was a flat failure, and this success I cannot but attribute to the use of lime as described. The matter has impressed me so genuinely that I am laying plans to lime all my Grape vines early in this coming March.—A. Rutledge, *Mercersburg, Pa.*

Introducing Little-Known Plants

To the Editor of The Garden Magazine:

IT IS easy enough for the American flower-lover to go into ecstasies when rambling through European gardens. Always the new things are a prime factor in the creation of this state of mind.

Of course, some of these new things are as old as the hills, by horticultural reckoning; the reason that they are not found in American gardens is very often because they have been tried and, for climatic reasons, found wanting. But if one has a rude awakening to this understanding, comes also the pleasant realization that there are actual novelties that ought to be widely welcomed in the United States. And there are discoverable other flowers that, though introduced to culture abroad years ago, are properly classable as new here, for the reason that they are not generally known. By these, however, I mean only such as apparently are suitable for more or less American use, but have not been given a fair trial under favorable conditions. In this connection it is important that American amateurs, in particular, should "get wise" to the important fact that it is not altogether the difference in climate that gives English gardens certain flowers that are little seen here or wanting altogether. Often it is English concentration and perseverance that does the trick. For one thing, many plants not quite hardy are made so by the use of small movable coldframes and by the same means bulbs that must have extraordinarily dry ground after blooming are protected from the rain.—H. S. Adams, *New York.*

Does Watering Help?

To the Editor of The Garden Magazine:

YES Sir! Given a light soil on sand or gravel, with a low water level, and a month of hot, dry weather and it is safe to say that, without liberal watering, none of the ordinary garden stock is going to reach anything like its maximum; particularly if the ground is merely scratched over with a shovel or plow. Deep digging or trenching will do much to conserve moisture, especially when the surface is kept constantly hoed and cultivated, but it will not produce the finest yield, which is, after all, what a small gardener desires. This is my comment on the question put in the September Garden Magazine.

In the field, watering is more or less out of the question, but a garden is not a field. Usually, the farmer avoids locating on land that dries out; the home garden has to take what is available and, generally the builder does not select land for its garden possibilities.

Personally, I have worked on all kinds of soil and am a crank on deep digging, but I have never doubted the value of watering; I invariably start in before the plants show signs of suffering. Try to grow good Pansies, Sweet-peas, Roses, table Peas etc. without watering and see what happens when the hot weather strikes them. The Pansies immediately run small and mildew; Sweet-peas shorten in stem, Roses mildew like the dickens, table Peas do likewise. After all, the interest in gardening lies in ever seeking to have something better than the ordinary things.—T. A. W.

Converting the Greenhouse into a Rockery

To the Editor of The Garden Magazine:

EXPERIMENTING with a greenhouse rock garden this year, I have come to the conclusion that the rare Alpines can be raised from seed and grown successfully under glass.

Outside rock gardens of America are something of a farce. They are more like rough herbaceous gardens than rockeries, with rampant plants of all descriptions huddled together. They do not possess the rare Alpines found in European gardens. Unfortunately most of these gems will not stand the American summers, to say nothing of American winters.

With coal at fifteen dollars per ton, many greenhouse owners have abandoned the idea of operating stove houses where the temperature cannot fall below 60 degrees, but a considerable amount of enjoyment can be obtained by simply converting the greenhouse into a rockery where Alpine plants can be grown. The cost of remodelling is very slight, and the heating expense practically zero. This has been successfully done in Great Britain, why not try in America?

Last spring I procured seeds which with very few exceptions all germinated and the plants are now thriving. Even choice gems such as Androsaces, minute Campanulas, Viola gracilis, Persian Cyclamen, Ramondias, encrusted Saxifrages, moss Saxifrages, Aubrietias, Primulas, etc., came quite freely from seed and are flourishing. These were kept in pots until large enough to handle and then transferred to their permanent quarters—Joseph B. Reardon, *Head Gardener Harvard University Botanic Garden, Cambridge, Mass.*

The Himalaya Still Under Fire

To the Editor of The Garden Magazine:

I NOTICE that W. T. A. of New Jersey asks for information concerning this Blackberry. I have had no personal experience with it, but the catalogue of J. T. Lovett, Little Silver, N. J., has a description of the plant which suggests that it may not be altogether adapted to New Jersey conditions, in which case it would be well for W. T. A. to plant some other variety. Mr. Lovett is such a candid nurseryman that he calls attention to failings as well as virtues in the plants he offers. I quote his description in full:

"Himalaya.—A giant, indeed, in growth. Although of delightfully sweet, brisk flavor, at Monmouth the berries are small and the yield has been unsatisfactory. We have, however, received so many letters from patrons commending it highly that we deem it proper to revise our description of it. The canes are tremendous growers, hardy, and with some, at least, are enormously prolific. Berries jet black, very firm, but rather small. Ripens late. Should be given support, as it is almost climbing in growth. When grown over stakes or on an arbor it does best."—A. H. B.

To the Editor of The Garden Magazine:

RESPONDING to the request of W. T. A. in September, let me say that I have raised the Giant Himalaya Blackberry for ten years and regard it as the best of all bush fruits, giving the most and finest fruit for the effort expended. Few people appreciate it because they have not learned how to grow it to perfection, the secret lies in severe pruning, exercised frequently throughout the growing season. Left to itself it spreads all over the garden, wasting its energy in foliage to the sacrifice of the fruit, both in quantity and quality.

I plant eight by eight feet and allow each plant to grow but a single new cane each season. This involves cutting out all additional shoots at the ground and removing all side shoots about twice a month. These canes are trained along wires about five feet from the ground. They frequently attain a diameter of an inch and three quarters and a length of fifty feet. In the spring cut out all old growth and shorten new canes to one third their length.

Side shoots put out the second year will all bear fruit and should be allowed to grow. These shoots grow three to five feet long and the fruit sets at their tips out of the reach of the rather vicious thorns.

Pruned in this manner the Giant Himalaya has borne superlatively without any cultivation whatever. The prunings are allowed to accumulate on the ground under the bushes where they form a heavy mulch which keeps down weeds and conserves moisture. I have one planting which has not been cultivated for six years and it produced its best crop this season.

The Giant Himalaya is peculiar in that it will not cross with other Blackberries. So far as I can learn all efforts to hybridize it have proven unsuccessful. If any such efforts have succeeded I would like to know of them. Luther Burbank, who introduced Giant Himalaya from India, worked with it for fifteen years, and has recently introduced an improved variety called the Superb Himalaya which, according to introducer's description, is a more vigorous grower and produces more and better fruit. I have grown the Superb variety two seasons, but cannot decide whether it is a material improvement on a fruit which already left so little room for improvement.

Another peculiarity of the Giant Himalaya is that it grows readily from seed and comes true. Every summer I pull out hundreds of seedlings where the seed has been scattered by birds. I am so enthusiastic an admirer of the Giant Himalaya that I will send seedling plants while they last, and seed when the plants are exhausted to such of your readers as may desire to experiment with it.—Joe Smith, *Longbranch, Wash.*

To the Editor of The Garden Magazine:

W. T. A. asks "What to do with the Giant Himalaya Blackberry" to make it bear and restrain a too vigorous growth. My experience is it won't bear; and after some years experimentation, suggest the best way to restrain its growth is to take the plant as soon as it is received and burn it. There is no other way to restrain it.—P. H. Forbes, *Kansas.*

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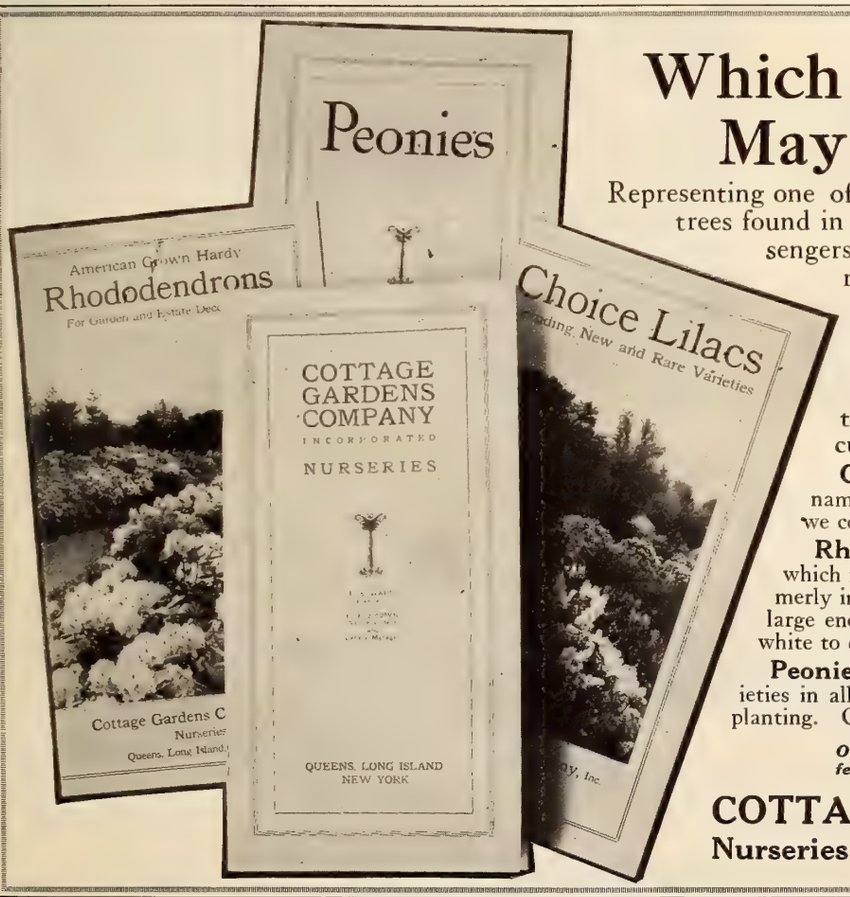

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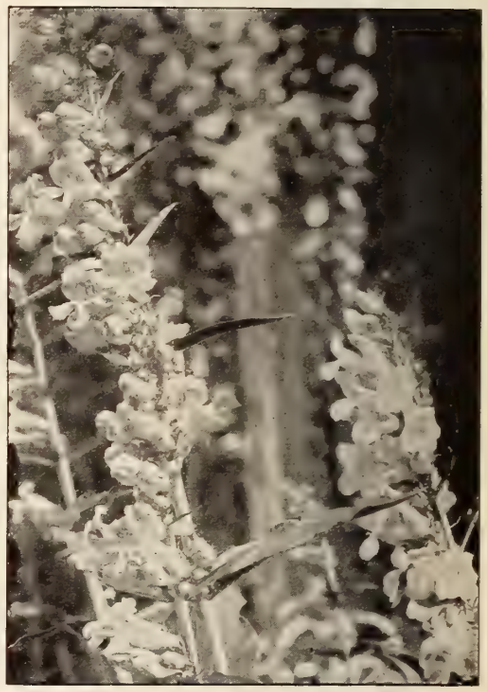
The variety glaber blooms from early summer through most of September, while Pentstemon



ROCKY MOUNTAIN PENTSTEMON

caeruleus is a spring-bloomer. The former is much more adaptable to ordinary garden conditions than the latter. If the soil is so constituted that water will readily be taken up and sink away from the surface, giving the plant a chance to draw its moisture from below, it is easily grown; the variety caeruleus, on the other hand, while always beautiful, is never grown to absolute perfection without a heavy percentage of clay.

I wish I might describe the beauty of Pentstemon glaber! Let me quote the words of Mr. Reginald Farrer, that noted lover and grower of alpines, in the truest description of this plant I have ever read: "glaucous gray leaves amid which nestle whorls of loveliest flowers, rather small but of translucent, very pale, turquoise color with a soft white throat. Not even to myself, of course, does the hard opacity of turquoise convey a fair impression of the bland soft transparent blueness of the Pentstemon—so perfectly gentle yet so decided in its purity of tone. However, there is nothing better to be done unless one ventures on the tenderest azure of early dawn for one's parallel and that, again has too much green in it to realize the absolute heavenliness of the Pentstemon's blossoms."

(*Continued on page 350*)

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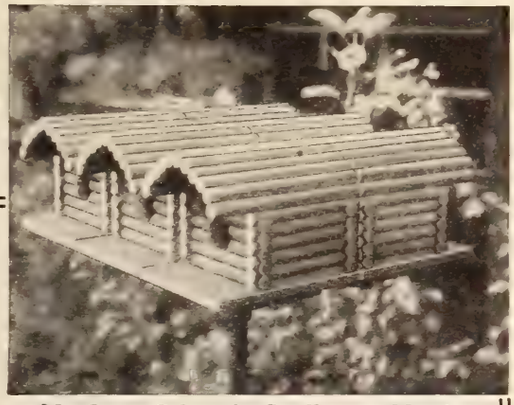

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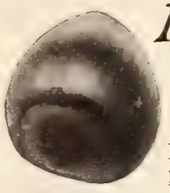

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It will be a pleasure to mail the Catalogue to every GARDEN MAGAZINE reader.

Expert Advice Freely Furnished on Request

W. & T. SMITH COMPANY GENEVA, N. Y.

The GARDEN MAGAZINE, January, page 25 tells how to improve your gardens. Take out some old and put in new. You do not have to live all your life with a mistake!

Mr. J. H. McFarland lambasts nurserymen for not having some of the new things. We do not have all of them, but here are some.

Elscholtzia Stauntoni. In September a mass of pale lavender flowers all buzzing with bees. Mint family. 2′ high, $1.00 each.

Evodia hupehense. A linden-like tree from China illustrated in GARDEN MAGAZINE, Feb. '17. 3-4′ high, $1.50 each; $10.00 per 10.

Forsythia intermedia spectabilis. 3-4′ high, $1.00 each; $7.50 per 10.

Halesia carolina monticola. Grows as a straight tree 80′ high, not a many stemmed bush-shaped tree like the others. 3-4′ high, $3.00 each.

Juniperus littoralis. A rock garden plant used by the Japanese for holding sand dunes. $1.00 each; $7.50 per 10.

Malus Arnoldiana. White flowers; deep red cherry sized fruit that taste as good as cider when frozen and decayed. 4-5′ high, $1.50 each; $10.00 per 10.

Morus acidosa. A bird feeding plant. Most people consider the mulberries too sweet. This one may suit. 3-4′ high, $1.00 each; $7.50 per 10.

Philadelphus magdalenae. One of the new Philadelphus that Mr. McFarland criticizes the nurserymen for not growing. 3-4′ high, $1.00 each; $7.50 per 10.

Rosa Hugonis, Father Hugo's Rose. A welcome addition to the shrubs. Big, round bush of healthy foliage with bright yellow flowers similar to, but earlier than, the Persian Yellow. $2.50 each; $22.50 per 10.

Sorbaria arborea glabrata. Vigorous shrub with white panicles, mid-summer, almost as showy as Hydrangea paniculata grandiflora. 3-4′ high, $1.50 each.

Styrax obassia. Chas. A. Dana's Arboretum has the only one we know of. It is an old tree 14′ high with circular leaves; racemes of orange-blossom-like flowers in May and coffee-like fruit. It is hardy at Glen Cove on Long Island Sound. 2′ high, $1.00 each.

Styrax japonica. Flowers similar to the above. Small, glossy, privet-like leaves. The daintiest little tree we know of. Hardier than the above. 2′ high, $.50 each; 7′ high, $6.00 each.

Cotoneasters. Rare and beautiful group. Some suitable as low plants for the rock garden; others as taller shrubs in the background. You can show off a collection of these all winter. Some cling to the rocks with graceful sprays of evergreen foliage and coralberries.

C. Zabelii. 2′ high, $1.50 each; $10.00 per 10. *C. divaricata.* 2-3′ high, $1.00 each; $7.50 per 10. *C. Dielsiana.* 2-3′ high, $1.00 each; $7.50 per 10. *C. floribunda bullata.* 2-3′ high, $1.00 each. *C. rotundifolia.* 1′ high, $.75 each. *C. Salicifolia.* 4″ pots. $1.00 each.

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Handsome grape-like fruits.

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Cornus kousa. Beautiful Japanese tree. Month later than the above. 8′ high, $6.00 each; $50.00 per 10.

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Special Offer: We will send one packet each of above 3 superb new Zinnias for 50c. or 3 packets each of Dahlia-flowered and Conical, together with 2 packets of Achievement. 8 packets in all, for **$1.00**

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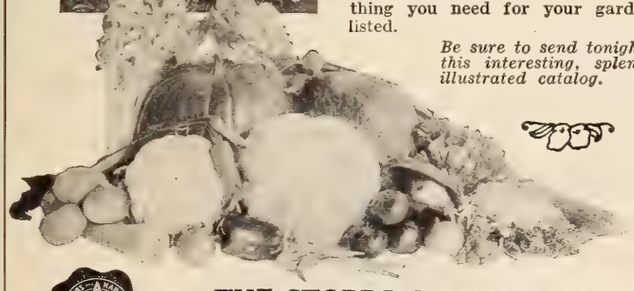

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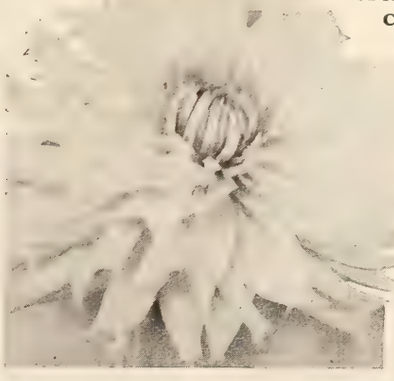

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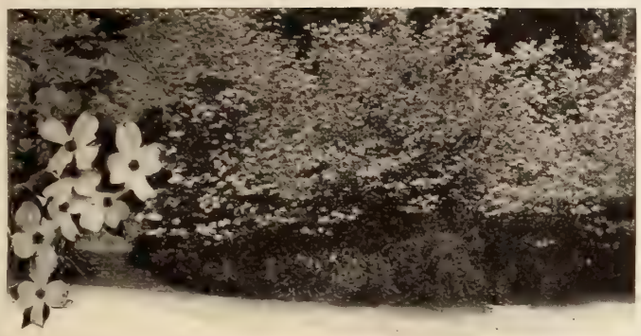

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A splendidly illustrated book of 200 pages, giving interesting stories of rose progress and the achievements of American amateur rose growers. This book is supplied to members only. The 1922 issue will be ready about March 1st.

The Members' Handbook
supplements the Annual with much valuable information about Roses, and gives a complete list of members so you can find rose-lovers in your neighborhood. Ready about September 1, 1922.

A Card of Membership
admitting you free to all rose shows in which the Society formally takes part.

Advice From Research Committee
Members can secure advice from a committee of Rose experts about varieties, cultivation, insects, diseases, habits, color, and other characteristics of all known Roses.

All of these will be given to new members who join before May 1, 1922. Send your name, address, and check for $3.00 payable and directed to

The American Rose Society

JOHN C. WISTER, *Secretary*

606 Finance Building, Desk G, Philadelphia, Penna.

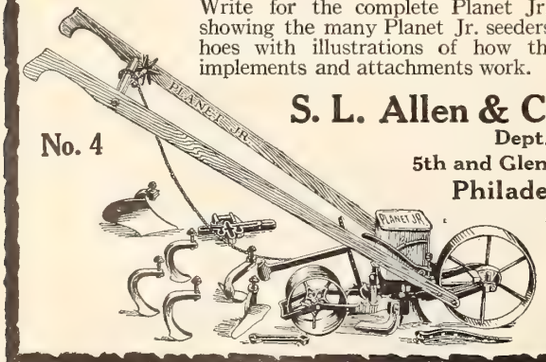
The coupon good for $2.00 worth of Rose bushes (or other plants) and the Membership Card will be sent to you at once. The Rose Annual and the Handbook will be forwarded as soon as published.

The Man With the Wheel Hoe

Planet Jr. garden tools have made home gardening possible and popular. They have changed irksome drudgery into a healthy, outdoor pastime in which the whole family shares. A few minutes a day, walking in a natural position with a Planet Jr., will keep your garden free from weeds.

Know the summer-long satisfaction—and economy—of fresh, crisp, tender vegetables for your table. Put in as big a garden as you want. Planet Jr. will keep it fresh and growing. Get a new idea of how really good garden "sass" can be when it comes straight to your kitchen from your own garden.

For the large home garden one of the most popular tools is the Planet Jr. No. 4 Combined Hill and Drill Seeder, Single Wheel Hoe, Cultivator and Plow. It will plant in hills or continuous rows accurately in a perfect line, and will do the cultivating right through the season.



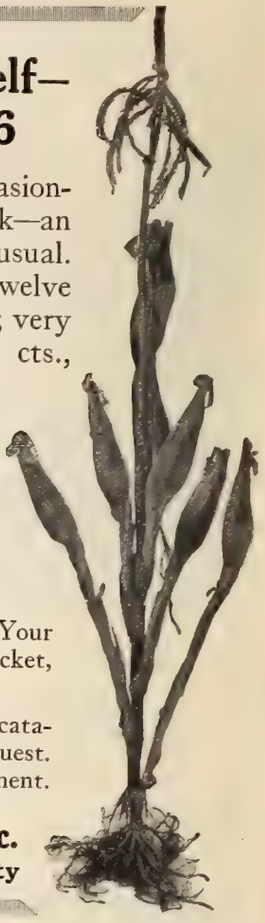
No. 4

Write for the complete Planet Jr. catalogue showing the many Planet Jr. seeders and wheel hoes with illustrations of how the different implements and attachments work.

S. L. Allen & Co., Inc.
Dept. 32
5th and Glenwood Ave.
Philadelphia

Planet Jr.

Count Them Yourself—
1 - 2 - 3 - 4 - 5 - 6



Hunt's White Prolific Corn occasionally has 8 or 9 ears to the stalk—an average of 4 to 5 ears is only usual. A fine mid-summer variety with twelve rows of white grains to the ear; very sweet. Packet of 50 seeds, 25 cts., five packets, $1.00.

New "Oblong" Beet

Very early; extra fine flavor. Try it in your garden this summer. Packet 15 cts., ounce 75 cts.

Pink Beauty Celery

Solid pink stalks of excellent flavor. Your garden should have this novelty. Packet, 25 cts., ounce 75 cts.

These novelties are described in our catalogue for 1922; copies sent free on request. Or order direct from this advertisement.

WILLIAM M. HUNT & CO., Inc.
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"Bulbs that Bloom"

They cannot help but bloom! They will bring to you—in embryo—the sunshine of the Cedar Acres, the charms that nature stores in her gift in form of flowering bulbs. Please afford our illustrated booklet a chance to acquaint you with Bulbs of quality.

Cedar Acres Gladioli and Dahlias

comes to you from specialists devoted to bulb production. May we hope that you will give one of the offers a trial?

25 Bulbs (no two alike), Gift Box	**$1.00**
25 Primulinus Hybrids, new orchid flowering	**1.25**
100 Bulbs, four colors	**5.00**

Express prepaid.

Plant "Bulbs that Bloom" and have flowers all summer.

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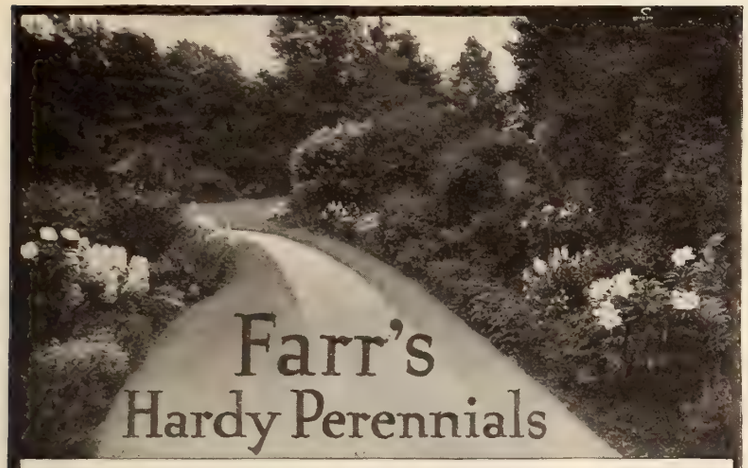

Farr's Hardy Perennials

OF ALL of the gardens that have been planned and made, a garden of hardy perennials gives the most real, deep-down satisfaction and joy. Radiant Peonies, gorgeous Irises, Phlox, Delphiniums, Digitalis, Aquilegias and a host of others, make up the succession of flowers in the garden of perennials.

Spring-time is Planting-time

Beside the multitude of perennials, we have here at Wyomissing the old-time favorite shrubs and a score of the new introductions—Lemoine's Deutzias, Philadelphus, rare evergreens for special purposes, rock plants, and many other things that will give character to your garden the first season. Most of these plants, as well as many shrubs, can be shipped and planted safely in spring.

Farr's Hardy Plant Specialties

(Seventh edition) classifies the finest varieties of landscape-making material. It is really a comprehensive text book, and will be of value to amateurs and experts who delight in hardy plants and flowering shrubs. The book is too valuable for promiscuous distribution, but will be mailed to any address for $1, which sum will be credited on your first order amounting to $10.

BERTRAND H. FARR, Wyomissing Nurseries Co.
104 Garfield Avenue, Wyomissing, Pennsylvania

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Introductions

are some of America's most popular Dahlias, including

Break O' Day

Sweepstakes prize winner at Seattle, 1921, for best bloom in Show. Break O' Day is a hybrid cactus of gigantic size; color clear sulphur yellow, shading to white at tips.

Send for our 1922 Catalogue

Dahliadel assures you of the cleanest and healthiest stock procurable, as all roots used in filling orders are grown at Dahliadel Nurseries

DAHLIADEL NURSERIES
Warren M. Maytrott **VINELAND, N. J.**

Wagner Flowers and Plantings

PLAN to make your grounds more beautiful this spring by planting Wagner hardy flowers, roses, shrubbery, evergreens, and ornamental trees.

Wagner stock has long been favored by flower lovers because of its vigor and full blooming qualities.

To make your grounds more harmonious, there is available Wagner Landscape Gardening Service. The broad principles of this service are to create a garden of originality and loveliness. Whether you have a modest suburban lot or an extensive estate, our garden experts can aid you. Plans submitted by mail or by a representative.

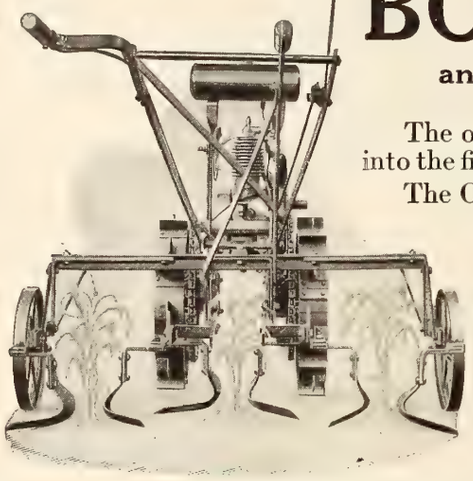
You'll find much interest and value in our new catalogue. It tells of Wagner flowers and the Wagner Landscape Garden Service. There is a copy for you if you will write. Please ask for No. 281.

WAGNER PARK NURSERIES
Box 81, Sidney, Ohio
Nurserymen *Florists* *Landscape Gardeners*

WAGNER
PARK NURSERIES

Physical Labor or Scientific Effort, Which?

Any one cultivating half an acre of ground or having a lawn of such dimensions *knows* what it means to maintain such ground in a desirable state of cultivation. Help seems as scarce as ever and still costs much. Neither factor will trouble the man having a



BOLENS Power Hoe
and Lawn Mower Tractor

The only garden tractor that can be sent into the field without an expert demonstrator.

The Operator CONTROLS both Tools and Tractor perfectly with one movement. A 12-year-old boy can do a first-class cultivating job with very little effort.

Change of implements made instantly without the use of a wrench and without losing tool adjustments. Snap Hitches enable operator to instantly change from lawn mowing to seeding or cultivating. Does the work faster and better. Gives you time for pleasure gardening.

Write for descriptive Circular explaining merits in detail.

GILSON MANUFACTURING COMPANY

111 PARK STREET PORT WASHINGTON, WISCONSIN

A Sensation in Climbing Roses

THE illustration pictures the wonderful Paul's *Scarlet Climbing Rose* which was awarded the gold medal and cup at the National Rose Society Exhibit last year. At the Bagatelle Gardens, Paris, last spring, President Pennock reports that *"Paul's Scarlet stood out by far the best among the climbers and attracted the public probably more than any other rose."*

We regard Paul's Scarlet as far superior to the climbing American Beauty and the old time favorite Crimson Rambler. Vivid scarlet, slightly crimson, it makes a brilliant display for a long time in the garden. A strong grower, its full foliage being free from mildew, diseases, and insects. By cutting back it can be made a beautiful bush rose.

Plants from 2½" pots, 30c, 4 for $1.00, postpaid. 2 year old plants, 90c each, $9.00 per dozen; large specimen plants, $1.50 each. By express, with soil on roots. All plants grown on their own roots.

Our "New Guide to Rose Culture" for 1922 It's FREE

Illustrates wonderful "Dingee Roses" in natural colors. The lifetime experience of the *Oldest and Leading Rose Growers in America.* Offers 500 varieties Roses and other plants, bulbs and seeds and tells how to grow them. Edition limited. Established 1850. 70 Greenhouses.

THE DINGEE & CONARD CO., Box 237, West Grove, Pa.

Elmwood Terrace Gladioli won the Kunderd Gold Medal

at the Annual Show of the American Gladioli Society, 1920, for the finest and largest collection of the Kunderd originations.

Last Summer at the American Gladioli Show, we made twenty-four entries and won twenty-four prizes, sixteen firsts, seven seconds and the *Burpee Silver Trophy* cup which was awarded our exhibit of Kunderd's beautiful "Marshal Foch" as "the *finest* variety." Our collection now embraces over 400 of the cream of exhibition varieties and the commercial favorites.

A handsome descriptive booklet will be mailed upon request.

The following special offers will be sent postpaid. All are full sized bulbs grown for exhibition purposes:

1—3 Kunderd's Marshal Foch, $1.50, $5.00 dozen.
2—2 each Scarlet Princeps, Mary Pickford, Alice Tiplady, Topaz, Rose Bud, Summer Beauty, (all Kunderd's) $2.50.
3—The Glory collection, one each Purple Glory, White Glory, Golden Glory, Orange Glory, Rose Glory, Violet Glory—all ruffled—all Kunderd's, $3.25.
4—100 bulbs in ten named fine commercial varieties, ten each, correctly labelled, $4.00.
5—100 bulbs in extra fine mixture, $4.00.
6—100 Kunderd's Orchid mixture Prim. Hybrids, $6.00.

MRS. M. B. HAWKS

BENNINGTON VERMONT

The Way to Get Bigger, Better Crops, and Good Profits

Do you know that in Europe they raise 200 bushels of Potatoes, and in Egypt, 400 lbs. of Cotton, and the world's average, outside of U. S. for Sugar Cane, is over 26 tons per acre?

Here we raise only 97 bu. Potatoes, 185 lbs. of Cotton per acre, and our average Sugar Cane production in U. S. is but 11 tons to the acre, less than half of the world's average.

The reason is that farmers abroad use fertilizer containing 5 per cent. phosphoric acid and 4½ per cent. available nitrogen, largely made up of Nitrate of Soda. We use much fertilizer containing 8 per cent. phosphoric acid and but 2 per cent. nitrogen, which is mostly unavailable, therefore a disappointment to the user.

To insure good crops of good quality that will fetch top notch prices, use 100 pounds of Nitrate of Soda to the acre on seeded crops and 200 pounds on cultivated crops and fruits, as soon as the growth starts, or just at seedtime.

"Its use (Nitrate of Soda) has become extensive for general farm crops. It is one of the most valuable of nitrogenous fertilizers." Prof. Snyder, Minnesota State Agricultural College.

If you will write William S. Myers, Director, 25 Madison Avenue, New York, being sure to state what crops you grow, he will send, without charge, a booklet, giving valuable information regarding fertilizing for profitable results.

ANDORRA

AN High Grade Stock of Ornamental Trees and Shrubs. Catalogue on request.

ANDORRA NURSERIES
WM. WARNER HARPER, *Prop.*
CHESTNUT HILL PHILADELPHIA

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Please send me your latest catalog of vegetable and flower seeds.

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Our catalog is really a text-book on the cultivation of flowers and vegetables. It contains invaluable hints to homegardeners that will insure success.

ELLIOTTS
WORLD'S BEST
SEEDS

We list the choicest varieties of full-sized, perfectly developed, thoroughly tested seeds. You will find many specialties not possible for you to get from any one but us.

Read the guarantee in our catalog. Twenty-nine years of experience enables us to pledge satisfaction or your money back.

ELLIOTT NURSERY CO.
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CHERRY HILL QUALITY

PLACE YOUR ORDER EARLY FOR PEONIES OF OUR FAMOUS CHERRY HILL STRAIN.

SPECIMEN ORNAMENTAL EVERGREENS, SHADE TREES, FLOWERING SHRUBS, IRIS, PHLOX, HARDY GARDEN PERENNIALS.

THE QUALITY OF OUR STOCK WILL SATISFY THE MOST PARTICULAR PERSON.

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Consult your phone book for number. If not yet listed, ask information.

IN these cities it is now no longer necessary to waste hours and hours hunting for the particular advertised things you want to examine or buy.

Phone any Tel-U-Where Bureau, tell the operator the products you are interested in finding, and a list of dealers will be mailed you at once.

There is no charge, no red tape and no obligation of any kind. Simply use the phone.

This service can be given you without charge, because it is supported by the manufacturer and advertiser as a convenience to you in finding *his* goods.

Such representative products as these listed below are among those now served by Tel-U-Where. (The manufacturer in each case has subscribed to the service.)

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"Educator" *Shoes*
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"Good Shepherd" *Yarns*
Elliott *"Address-Press"*
"Safepack" *Shingles*
"Lamson" *Conveyors*
"Arch Preserver" *Shoes*
"Chase" *Auto Robes*
"Burrowes" *Rustless Screens and Billiard Tables*
"Wizard" *Adjustable Foot Appliances*
"Wurlitzer" *Musical Instruments*
"Laun-Dry-Ette" *Washing Machines*
"Simplex" *Ironing Machines*
"Cabot" *Cement, Waterproofing Stains and Varnishes*
French, Shriner & Urner *Shoes*
"Gruen Verithin" *Watches*
"Sturtevant" *Heating and Ventilating Apparatus*
"Armstrong" *Electric Table Stoves*
"Black & Decker" *Drills and Compressors*
"Cadillac Special" *Vacuum Cleaners*
"Ransome" *Concrete Mixers and Machinery*
Bird's "Neponset" *Roofing and Floor Covering*
"Munsingwear"
"A. P. W." *Paper*
"Ideal" *Power Lawn Mowers*
"Way Sagless" *Springs*
"Houdaille" *Shock Absorbers*
"Tycos" *Thermometers*
"Arnold Glove Grip" *Shoes*
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"Poland" *Spring Water*
"Stacy-Adams" *Shoes*
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You can enjoy them this season. You don't have to wait, for they bloom the first summer. You needn't own a pool; a half barrel will do.

Start This Year

Send for our catalogue—it's the best way to make a start. In it you'll find lists of Lilies and Aquatic Plants, of georgeous colors and splendid foliage. Full culture instructions are included, and special varieties are recommended for tub culture. A copy will be sent you on request; then you can see for yourself. Write to-day.

INDEPENDENCE NURSERIES
Box M **Independence, Ohio**

High Grade Gladiolus
Large Flowering Bulbs

America, Lavendar Pink.
Cracker Jack, Dark red.
Halley, Salmon pink.
Mrs. F. King, Salmon red.
Mrs. F. Pendleton, Bright pink with red blotch.
Mrs. Watt, Bright wine.
Niagara, Soft cream.
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Peace, Large white.
Yellow Hammer, Fine yellow.

3 bulbs each of the above, 10 var. (30 in all,) $2.00 postpaid
6 bulbs each of the above, " " (60 in all) 3.75 "
12 bulbs each of the above, " " (120 in all,) 7.00 "

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the new profession for Women
SCHOOL OF HORTICULTURE, Ambler, Penn.
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The most comprehensive book on garden planning ever published. Covers practically all parts of the country. Over 400 pages of text; a complete index; cross referenced lists; a complete bibliography; a complete glossary of terms. An indispensable hand book and guide.

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Order now for early spring delivery. We are growers and importers of the choice varieties. Over 600 varieties of Irises. Our ideal soil conditions enable us to grow the finest of roots and bulbs. Our selected varieties of Irises and Peonies withstand *our* extremes of weather and are therefore acclimated to grow well in all parts of the United States and Canada. We ship with the idea to please, and that we succeed in this respect is shown by the number of repeat orders received.

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Practical ideas for home decoration. Attractive treatments for kitchens, bathrooms, drawing rooms, porches, halls and all parts of the house. Showing the right use of Tiles—the enduring decorative material. Beautiful illustrations give ideal color and decorative combinations.

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FIELD GROWN

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J. RENE THONET
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Fine Hybridized
DAHLIA SEEDS

25 cents, 50 cents, $1.00 per package.

Mrs. C. W. Igo, Colorado Springs, Col.

Long's Super Giant Pansies

Gigantic blossoms. Marvelous colors, mixed. Packet (200 seeds) 25c; 1200 seeds, $1.00.
True Rocky Mt. Columbine 10c Packet
CATALOGUE FREE
LONG'S PANSY GARDENS Boulder, Colorado

Here's a Water Lily Booklet for You

PICTURES four beautiful Lilies in natural colors; tells how to make a Water Lily Pool and what varieties to grow in it. You can succeed with these lovely flowers in your own garden if you have this booklet—send for it now.

WILLIAM TRICKER, *Water Lily Specialist*
661 Forest Street, Arlington, New Jersey

EVEN the man with a knapsack or tractor sprayer will find innumerable uses for this little compressed air hand sprayer.

Easily carried in one hand, it shoots the spray right where you want it. No waste of spray mixture. Just point the nozzle and press the trigger. Ideal for your hedges, roses, berry bushes and vines.

Length 10″; 7½″ diameter, Capacity 1⅞ gallons.

Pressure Pump, seamless brass tubing. Regular galvanized iron tank; brass tank if desired extra.

If your dealer can't supply you order direct. Sent parcel post, postage prepaid. Catalogue covering complete line of hand and power sprayers mailed on request.

THE DEMING COMPANY
322 Depot St. Salem, Ohio

Your Garden may have the best in FRUIT TREES, BERRY PLANTS, GRAPE VINES, SHADE TREES, SHRUBS, ROSES, VINES and PERENNIALS from our nursery.

"Grown in Vermont, it's hardy"
GEO. D. AIKEN Putney, Vt.

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We believe so, because the demand for the better class of Gladiolus stock is increasing by leaps and bounds.

Kunderd varieties such as B. L. Smith, Orange Glory, Marshal Foch, E. J. Shaylor, etc.; Diener's American Beauty, Eberius, J. London, Walsh, etc.; Kemp's, Austin's and Wright's varieties are fast disappearing.

Ask for our DescriptivePrice List, NOW, also our "Clubbing Offer" good until March 1st.

Bulbs guaranteed True to Name
CHAS. B. RAFFAUF Independence, Iowa

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Hundreds of Market Gardeners are more than doubling their profits by using my wonderful Plant Forcing devices. Don't be satisfied with a garden like the other fellow—beat him to it. No matter how backward the spring, it's easy with

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THE BALL MANUFACTURING COMPANY
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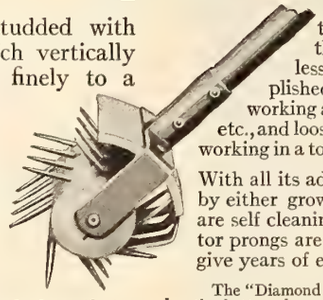
AT LAST:

The Perfect Surface Tillage Tool!

Experienced gardeners know that to keep the surface of the garden well pulverized means half the battle won. A dust mulch will save the moisture, give the roots a chance to breathe, thus inducing healthier growth standing for greater crops. Of all the cultivators available, none pulverize soil more thoroughly than

The "Diamond E" Porcupine Cultivator



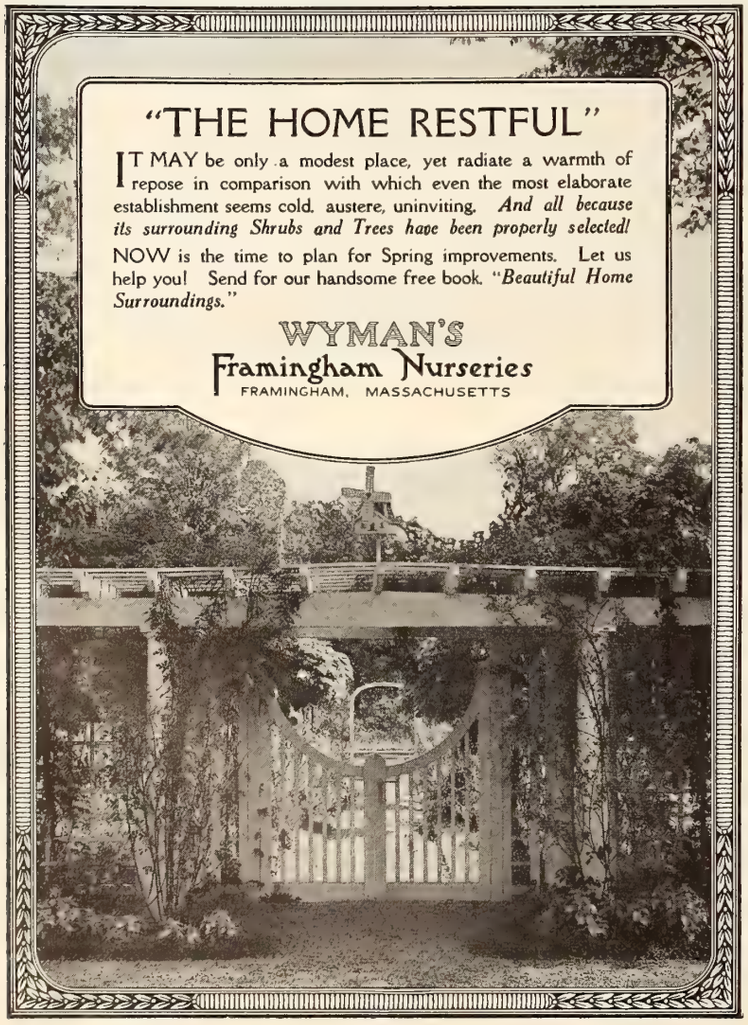
A steel covered roller, studded with four rows of steel spikes which vertically enter the soil, pulverize it finely to a depth of two inches. It absolutely destroys the constantly sprouting weed seeds, besides uprooting seedlings, thus making all fertility available for the cultivated crops.

For putting the seed bed in ideal condition, to crush lumps and clogs that are inevitable after soil is spaded, the "Diamond E" is one of the most valuable tools ever offered to home gardeners. It will get the ground in finer condition in less time than can ever be accomplished with a rake. Excellent for working around Shrubbery, Flower beds, etc., and loosening up bare spots in the lawn, working in a top dressing of fertilizer and seed.

With all its advantages, it is easily handled by either grown-ups or children, the spikes are self cleaning, the roller as well as cultivator prongs are made of strongest material to give years of effective service.

The "Diamond E" Porcupine Cultivator is handled by the better class of Seedsmen and Hardware Dealers, but if you cannot obtain one at your local store, send us his name and address and we will send you a circular and see that you are supplied.

The Everhard Manufacturing Co., Canton, Ohio



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The Famous Rose Hill Nurseries

North Avenue, New Rochelle, N. Y.

THERE are still some great bargains to be had in fine, large specimen trees, both Deciduous and Evergreen:

A great collection of **Box Trees** in all sizes, shapes and forms. They are not the tender varieties. But the hardy and sturdy types.

Koster Blue Spruce, Retinosporas, Colorado Spruce, Douglas Fir, Weeping and Copper Beech, Rhododendrons, both hybrids and native varieties. Also large collection of double and single Lilacs.

Flowering Shrubs, Roses, and a complete list of hardy Perennials. All of which are in prime condition, and must be sold to settle Estate. This stock should be seen to fully appreciate it.

ROSE HILL NURSERIES

North Avenue **New Rochelle, N. Y.**

Near Wykagyl Station on N. Y., Westchester & Boston R. R.

Send for this Book
"Owning Your Own Greenhouse"

A brief delightful fact-filled book of exactly the things you want to know before owning a greenhouse. Abundantly illustrated. Large type. Sent with our compliments.

Hitchings and Company

General Offices and Factory, Elizabeth, N. J.
New York, 101 Park Avenue Boston-9, 294 Washington Street

FORBES SEEDS

Are You Fond of Squash?

Yes or no! When you taste this real improvement in summer Squash you will be content with no other. When cut in half the long way, baked in the oven with butter, and the halves served individually, our

New "Des Moines" Squash

will completely surprise you. It is simple to prepare and easier to enjoy, particularly after the first taste. One customer writes

"I Never Ate a Squash That Tasted so Good to Me"

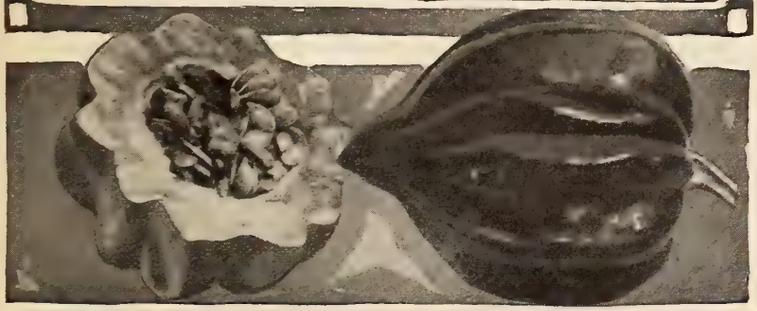
Baked or boiled, it is the best there is. By August 10th the ground will be literally dotted with the small Squashes.

Pkt. 25 cts., oz. 50 cts., ¼ lb. $1.40, Postpaid
Send for yours now and at the same time ask for a copy of

Forbes' 1922 Catalogue

accurately describing the things worth while in vegetables, flowers, lawn and farm, full of interest and helpful advice. Free on request.

ALEXANDER FORBES & COMPANY
111 Mulberry Street Newark, New Jersey



Rosedale Roses Abound in Bloom

For 22 years Rosedale Roses have satisfied many well known rosarians.

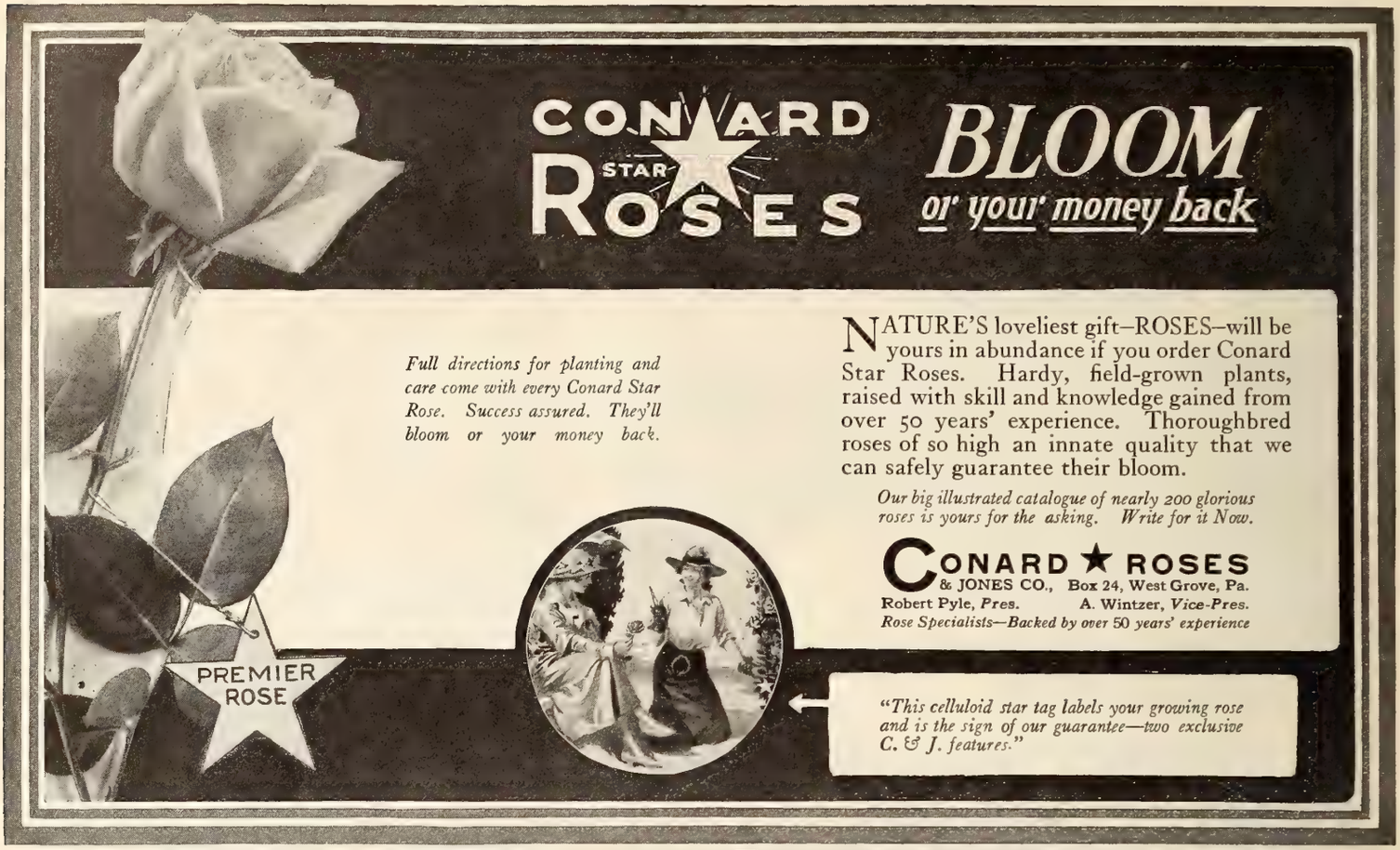
Plant Rosedale Roses this spring and enjoy a profusion of beautiful bloom this very summer from June to October. All our Roses are field-grown, heavy plants, two years old or more. These plants are dug and packed dormant; they'll reach you in perfect condition. In accord with our motto, prices are "As Low as Consistent with Highest Quality." Your choice from a large assortment, including stately Tree Roses, hardy Climbers, and everblooming Hybrid Tea Roses.

Other Rosedale Specialties

Evergreens in over 70 varieties, Deciduous Trees, Flowering Shrubs, Vines, Hardy Perennials and Fruit Trees.

We issue two helpful catalogues—February and August. One is now ready. Write for it to-day.

S. G. HARRIS
Box A, Tarrytown, New York



Full directions for planting and care come with every Conard Star Rose. Success assured. They'll bloom or your money back.

NATURE'S loveliest gift—ROSES—will be yours in abundance if you order Conard Star Roses. Hardy, field-grown plants, raised with skill and knowledge gained from over 50 years' experience. Thoroughbred roses of so high an innate quality that we can safely guarantee their bloom.

Our big illustrated catalogue of nearly 200 glorious roses is yours for the asking. Write for it Now.

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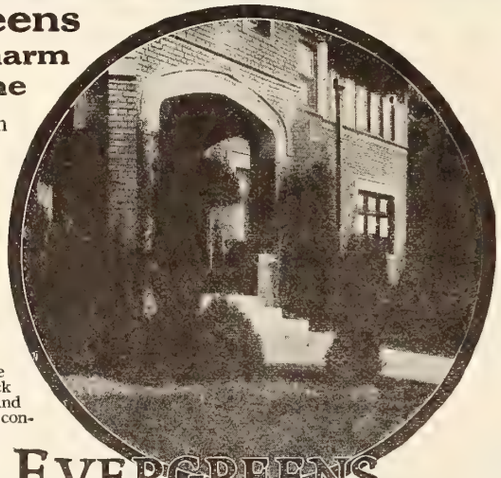
& JONES CO., Box 24, West Grove, Pa.
Robert Pyle, *Pres.* A. Wintzer, *Vice-Pres.*
Rose Specialists—Backed by over 50 years' experience

"This celluloid star tag labels your growing rose and is the sign of our guarantee—two exclusive C. & J. features."

Let Evergreens Increase the Charm of Your Home



IMAGINE that home in the photo *without evergreens!* Wouldn't its exterior be so much bricks and stone and mortar?

The charm evergreens give doesn't fade when Old Jack Frost thrusts forth his withering hand.

Therein lies the permanent ornamental value of well chosen evergreens.

But—be sure to choose well. We are ready to supply choice specimens from the largest stock of evergreens in the world. And —at a modest price—quality considered.

HILL'S EVERGREENS

—the proud product of a family that has made better evergreens its **one business** for over 60 years. Any Landscape Architect, Nurseryman or Florist you consult will affirm this. Send in your name and address for a Complimentary Copy of our 1922 Evergreen Book.

The D. Hill Nursery Co., Inc.
Evergreen Specialists for over 60 years
106 Cedar Street
Dundee, Ill.

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"Received on the 17th— erected by the 19th"

HODGSON HOUSES *are used for seaside and mountain cottages, bungalows, garages, playhouses, poultry and pet houses, offices, schools, gymnasiums and innumerable other purposes.*

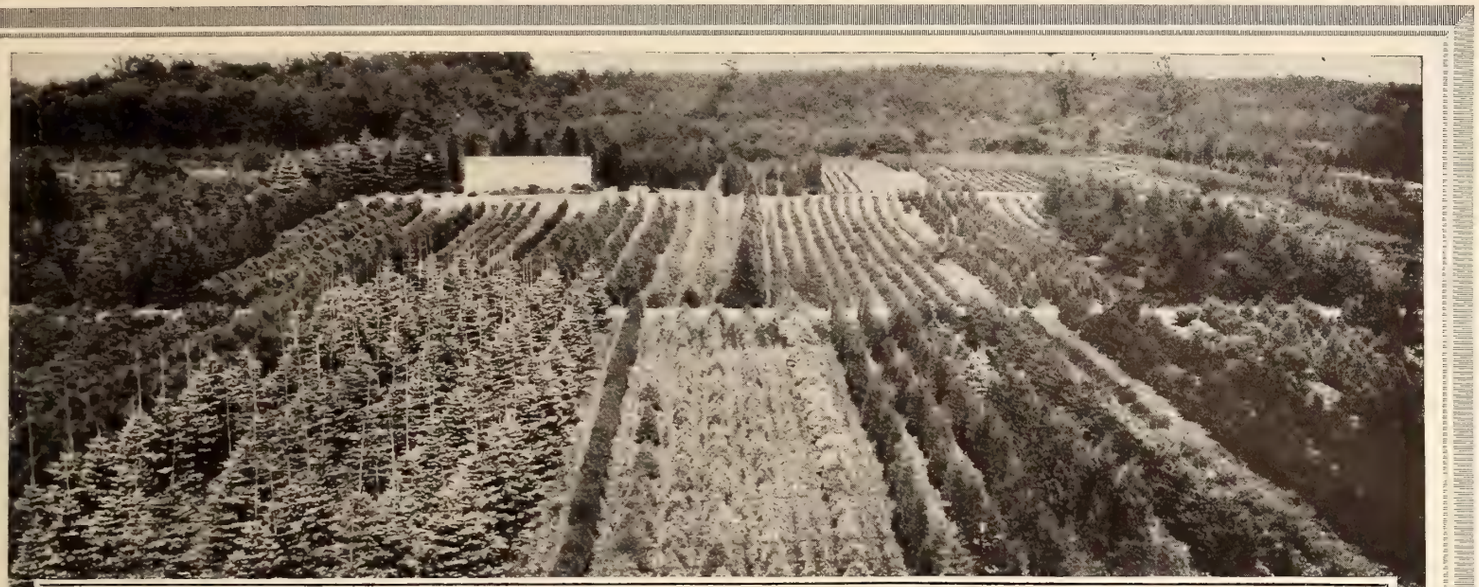
IT is a fact that with the help of an ordinary laborer you can put up a Hodgson House, like the one shown here, in two days. There is nothing better for a seaside cottage, mountain bungalow or country home.

Hodgson Houses are preferred because they are superior in materials, design and workmanship. Whether you buy a playhouse for the children, a garage for your car, a summer cottage or a permanent building, you cannot get anything more satisfactory than a Hodgson Portable House.

You will find the home you have been looking for described in our illustrated catalog. We shall be glad to send you this catalog on request.

E. F. HODGSON CO.

Room 228, 71-73 Federal Street, Boston, Mass., 6 East 39th Street, New York City



WE GROW NURSERY STOCK TO SUIT EVERY REQUIREMENT

We have a complete stock of Evergreen and Deciduous Trees and Shrubs as well as Roses, Vines, and Perennials. A small section of our Evergreens is shown above. A copy of our "Handbook of General Information on Trees and Hardy Plants" will be gladly mailed upon request.

THE BAY STATE NURSERIES NORTH ABINGTON, MASSACHUSETTS

W. H. Wyman & Son, Proprietors

Half a Bushel of Grapes the Second Season

from these "quick result" 3-year-old vines. A thick, heavy growth of roots guarantees they will take hold and grow well from the start. You may get a few bunches the first year, but the second year you ought to get a half bushel or more of grapes from these big, heavy vines.

One 3-year-old Plant of Each Variety, Delivered Free, $3.75

Concord. The best black grape. Big berries with plenty of juice.
Agawam. Red. Large bunches; pulpy; fine aromatic flavor.
Niagara. White. Without doubt the best white variety; juicy and easily pressed.

Send your order to-day for these three extra good varieties—**$3.75 delivered.**

In our catalogue you will find a complete list of all standard varieties, in 2-year-old vines. A copy of the booklet will be sent on request.

T. S. Hubbard Co.
Box 18, Fredonia, N. Y.

Dahlia "Mrs. Carl Salbach"

A New Dahlia
"Mrs. Carl Salbach"

Very large, full dahlia of beautiful shade of pink, with long rigid stems. A vigorous grower and prolific bloomer. Pronounced by many to be the best decorative dahlia to date.

Consistent Prize Winner

This dahlia was awarded a certificate of merit by the American Dahlia Society and the gold medal by The Dahlia Society of California, took first prize San Francisco and Oakland shows, 1920, for best twelve blooms shown with stems; won first prize for best twenty-five blooms San Francisco show, 1921. This is California's wonder dahlia.

Selected field grown tubers $3 each; $30 a dozen; special rates, large quantities

A New Gladiolus
"Rose Ash"

A beautiful new variety in a new color (ashes of roses). Long spikes of unusually large blooms, tall, strong grower. Creates a sensation wherever shown. Bulbs $1 each; $10 a dozen. Quantity prices on request. Many other new varieties.

Order now for spring delivery. Dahlia and Gladioli catalogue on request

Carl Salbach, *Grower*
6088 Hillegass Avenue, Oakland, Cal.

References: Farmers and Merchants Bank and Central National Bank, Oakland, California

Five Pecans in One Cluster

means prolific bearing, only one of the good qualities of grafted trees which means *Jones' Trees* usually, as most firms sell seedling trees only.

You can have trees like this on your home grounds. They require comparatively little attention after planting and produce annual crops of fine nuts in addition to shade. The pecan is distinctive and no better or more beautiful lawn tree can be found.

Write for Catalogue

J. F. JONES—*Nut Specialist*
Box G **Lancaster, Penna.**

HOME OF
SPIREA VAN HOUTTEI SHRUBS
classy and up-to-date, from one year to seven years old. All sizes and prices.
Grape Vines
The strong tops and roots you have been looking for. All leading sorts.
CHARLES NASH NURSERY **Three Rivers, Mich.**

A E WOHLERT
The GARDEN NURSERIES
Narberth Pa.

RARE ORIENTAL FLOWERING TREES

FROM JAPAN, CHINA AND PERSIA

Send for our catalogue in color

A.E. WOHLERT
The GARDEN NURSERIES
Narberth Pa.

(*Continued from page 332*)

I have never seen any instruction for cultivating these beautiful flowers. I have visited gardens where it was produced, not really grown, and have felt so full of pity for its little feet slipping, sliding, in light sandy soil trying vainly to obtain a foothold to breathe and throw out beautiful blossoms as it does when standing firm and strong in its native soil. An adobe hill looking toward the sun it delights in, and whenever a fair allotment of clay is given it in the garden it is well worth growing.

S. B. Walker, *Denver, Colo.*

FERTILITY OF APPLES

From comments that have appeared, it would seem that the bulletin issued by the Maine Experiment Station relating to the fertility of Apples has caused some surprise. Actually, however, there is nothing new in the announcement that many Apples are self sterile, a fact well known to many large growers.

According to the Maine experiments, only about a dozen varieties out of two hundred can be depended upon to set either with their own pollen or that from some other tree of the same variety. Most of the others, however, set freely when fertilized with pollen from other varieties. This subject has long been investigated and discussed in Europe, and up-to-date planters have made a point of setting out heavy pollen-bearing varieties among those known to be more or less sterile.

The famous English Apple, Cox's Orange Pippin, is recognized as almost sterile; whereas the popular early variety, Worcester Pearmain, is particularly patent for ensuring a good set. Herein lies the value of dwarf trees for small gardens, as a sufficient assortment may be planted to ensure a crop on some trees every season.

Incidentally, it is probable that bloom set with foreign pollen produces finer and better flavored fruit than self-set flowers. It is generally assumed that cross fertilization affects only the seed; but in fruits, it is not unreasonable to suppose that the stimulation of the ovaries by foreign pollen may actually affect the fruit itself.

Stocks, too, play an important part; for while there is little in the theory of pedigreed trees, it is unquestionably a fact that stocks do affect both the growth of a tree and the fruit it bears. If pedigree plays any part at all, it lies in the stock, and for this reason, bush trees on true Paradise stocks may be depended upon to yield a more even and finer grade of fruit than those worked on free stocks which are seedlings pure and simple, with all the varying qualities that seedlings naturally possess. One may not infrequently find two trees of the same variety yielding fruit differing to the extent that one colors freely while the other shows little inclination to color. The flavor of such fruit, too, may be so different that one almost doubts their relationship.

Realizing the general mixture existing in fruit stocks, one county association in England has for some years conducted an experiment station which has resulted in many surprising discoveries regarding fruit stocks, particularly in regard to the Paradise.

T. A. Weston, *N. J.*

California Dahlias
Our 1922 Illustrated Catalogue of Information
The Choicest Exhibition Varieties
Advance Dahlia Gardens
Box E, Compton, California

Progress Trees and Plants Grow
Send us 98c along with your inquiry for a Progress catalogue and get 40 fine mixed Gladioli Bulbs that will be the glory of your garden next summer.
THE PROGRESS NURSERIES
1313 Peters Avenue **Troy, Ohio**

IRIS and PHLOX for Spring Planting
We can't grow them all so we try to have the best. To induce a trial order we will send 12 choice Iris worth $4.00 for $3.00. Darius, Ingeborg, Isoléne, Loreley, Mme. Chereau, Mrs. Darwin, Nibelungen, Queen of May, Rhein Nixe, Sherwin-Wright, Walhalla, Walneriana.
Iris in choice mixture $1.00 per 12, $5.00 per 100, $45.00 per 1000. Mixed Phlox $1.50 per 12, $10.00 per 100. Postal card request brings Price List. "Let us improve our homes and make every spot within and without a pleasure to the beauty-loving eye."
GEO. N. SMITH **WELLESLEY HILLS, 82, MASS.**

BEST BROAD LEAVES
RHODODENDRONS, Kalmias, Azaleas, Evergreen Roses. Discounts on early orders. A February bargain in Large Boxwoods. Also DURING FEBRUARY—5 Broad Leaves and 1 Conifer, our selection, good 6-9 in. plants, 1 set only to each *new* customer, postpaid to *near* zones, for $1.00.
Hardy Evergreen Gardens, **Route 1,** **Old Fort, N. C.**

How to Make a Rock-Garden
A practical guide to the formation and management of rock-gardens, introducing ideas of value to those desirous of obtaining novel and charming effects.
GEORGE H. CHISHOLM, *Rock-Garden Expert*
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FOR SALE
Surplus Dahlia tubers from a private collection of over 250 varieties, mostly novelties. One dozen, all different and all labeled, my selection, $4.50 postpaid. Also a small lot from which the labels have become detached, per dozen $1.50 postpaid.
BOX 419 **BELLPORT, L. I.**

GRAPE VINES
Berry Plants ***Fruit Trees***
Gladiolus ***Dahlias***
We are large growers of Iris, offering 150 varieties. Illustrated catalogue free.
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Seedsmen *Nurserymen*

Moss Aztec Pottery
Offers a wide choice of objects, from simple fern dishes and bud vases to impressive jardinieres and plant stands. Its predominating characteristic is refined elegance in designs and colors. A post card request will bring you the "Moss Aztec" catalogue and name of nearest dealer.

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So. Zanesville, O.

Small Greenhouses Make Big Profits

Under-glass gardens produce pleasure profits as well as quickly pay for themselves You can propagate early plants—raise produce when prices are high—cut your table expenses in two—have winter posies—and handsome profits besides.

Callahan Sectional Greenhouses are made in several sizes and styles ranging from a lean-to for the garage to a handsome complete unit for the finest estate. They are standardized in design and built up in completely finished sections ready to assemble—only a wrench and a screw driver are required. Your gardener can erect one in a few hours.

Whether you have a farm, a city or suburban home or a country estate you will find pleasure and profit in a Callahan Sectional Greenhouse. Made only of very highest grade Red Gulf Cypress. Shipped direct. You save on the low Factory-to-You prices.

FREE BOOK Write at once for The Greenhonse Book. Gives complete information. Illustrates all styles and shows how easily they may be erected. Now is the time.

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901 S. Perry Street **Dayton, Ohio**

Also manufacturers of Greenhouses and Ventilating Apparatus for commercial florists and market gardeners. If interested in greenhouse growing on a large scale ask for our Commercial Catalogue.

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STRAWBERRY PLANTS

$3.50 Per Thousand. Our strong, healthy, tremendous bearing plants guarantee *big crops of luscious berries.* Best varieties for all kinds of soils. Full line of Raspberries, Blackberries, Currants and Asparagus. Large stock of extra fine Grape plants. GREATLY REDUCED PRICES. Our customers are making up to $1200 per acre from small fruits. New color catalogue free. Write to-day

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You Must Have Some of My
FULL-O-PEP, Strawflower Seed

They are grown and selected to produce long stems—just the kind to cut and dry for winter bouquets. Hundreds of other kinds of flower and vegetable seed, grown under my care, are listed in my catalogue. It tells all about my **FULL-O-PEP Shrubs, Vines, Roses, Hardy Flowering Plants and Seeds.** All the result of my best care in growing and selection. **FULL-O-PEP** Seeds and Plants have pleased thousands—they will make you glad. Write to-day for my 1922 Book. It is FREE.

JIM YOUNG, Seeds and Plants
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IS THE SURROUNDING OF YOUR HOME—ATTRACTIVE?

Perhaps a Rose Arbor or Pergola in the proper place of your garden would transform barren spots into places of real attractions.

A Catalogue, illustrating and describing such things required to beautify and put cheer and pleasure within the surroundings of home, will be mailed on application. When writing enclose .10c in stamps and ask for catalogue "H-33"

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RAIN WHEN YOU WANT IT

More Fun—More Profit—Less Work

You'll agree, anything that brings about such results, you ought to have. Thousands of delighted users testify to the success of the Skinner System.

You can have the Skinner System for $9.75 up.

All you need is water under 20 pounds or more pressure.

Easy to put in—easy to operate—a wonderful accessory for every garden.

Tell us how long and how wide your garden is and get a most interesting catalogue and cost estimate.

The Skinner Irrigation Co.

219 Water St. **Troy, Ohio**

SKINNER SYSTEM OF IRRIGATION.

Fenton's Hybridized Dahlia Seed
THE WORLD'S BEST

Grown on the only Dahlia Farm in the world that makes a specialty of Hybridized Dahlia Seed. Remember my seeds are not selected; they are hybridized, crossbred, pollen fertilized and each cross is kept in a separate envelope. When your seeds are packed in the seed envelope, I open 50 envelopes on the table and select two seeds, from each cross. When the stock of one cross is exhausted I open another envelope to take its place, and so on until I use them all. My wife said, you would think "Pa" was counting Diamonds. That is just what I claim:—That when you plant my Dahlia seed, you are planting diamonds. *Dahlia folder will be sent out early in January.*

Fenton's Dahlia Farm, 771 Buena Vista Ave., San Francisco, Cal.

DAHLIAS

All the good ones. Buy from the specialist and get the best true to name. Our catalogue describes all the best new and old varieties of dahlias, also gladioli and hardy plants. Send us your name for a copy.

N. A. HALLAUER **Ontario, N. Y.**

King of Commerce

(Awarded the Certificate of Merit, 1921, by the American Dahlia Society.)

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TRUE and GREAT DAHLIAS

INDIANA DAHLIA FARM
NEW ALBANY, INDIANA

1,200 Varieties. Catalogue Now.

A New Zinnia "La France"

Flowers six inches in diameter and four inches deep. A mass of soft, broad petals, forming wonderful blooms of a shell pink color, similar to that of the famous La France rose. Each petal tipped with a rich chocolate. Packet 20c. A great acquisition to any garden and a new color added to our famous Picotte Zinnias. Pictured and described in our 1922 Seed and Plant Book.

Not a Big Confusing Catalogue But a Convenient Seed Book

A real help in planning your garden. A Book that lists only the best of the flowers, vegetables, roses, shrubs and trees. Kinds that have proved the best for your garden. Send for this Condensed Seed Book to-day. It is free.

Hart & Vick—*Seedsmen*
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MRS. W. E. FRYER $1.50
KATHRYN FRYER 3.00

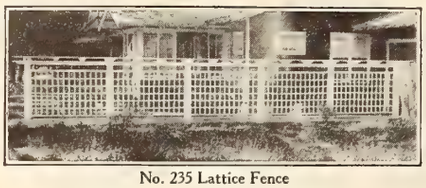
Special Offer—the two sent prepaid for **$3.50.**

Mr. John C. Wister, President of the American Iris Society, and who has seen more iris abroad, and in America than any person in the United States, speaks very highly of both of them.

My new catalogue contains beside my new iris the dependable varieties of Hemerocallis Gladioli, Peonies, Phlox and other flowers.

It is free—write for it to-day.

WILLIS E. FRYER **Mantorville, Minn.**



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BY THE USE OF OUR

FENCES, ARBORS, TRELLISES, PERGOLAS, LATTICE TRIMS, GARDEN SEATS, ETC.

Our equipment enables us to manufacture at low cost a very large line of original designs—the attractive kind. It will be a pleasure to mail you our booklet, "LANDSCAPE BEAUTY HINTS."

Our drafting department will design especially for you—No Charge.

If interested in Fences, ask for our Blue Prints showing many attractive designs.

Our Lattice Trimmings for walls both inside and out have proven welcome additions in gardens and homes. We have many styles suitable for the most elaborate mansion or the humblest cottage.

Free Catalogue

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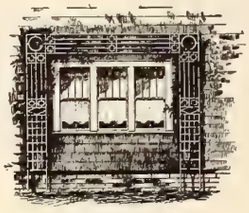

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Our specially prepared

CUT TOBACCO STEMS

Feeds the Plant—Kills the Insect. Contains no Weed Seeds or Insect Pests.

NOW is the time to apply these stems—Put them on top of the snow—The succeeding snows and Spring rains will leach out the potash, nitrogen and phosphoric acid—500 lbs., $8.00, 1000 lbs., $15.00, 2000 lbs., $25.00.

Write for special leaflet

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WHAT IT TELLS:

It tells: How to select varieties best adapted to your soil and needs. How to prepare the soil for planting. When to plant. The different systems of small fruit growing. How to plant. How to care for the patch. How to pick and market the fruit so as to obtain the highest prices. How to renew the patch. It is a Fruit Grower's Guide and whether you buy your plants from us or not you will need this helpful book—Nevins' "Success with Small Fruits." Send for your copy to-day. A postal will bring it.

NEVINS NURSERIES

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Ovid and Perry Mich.

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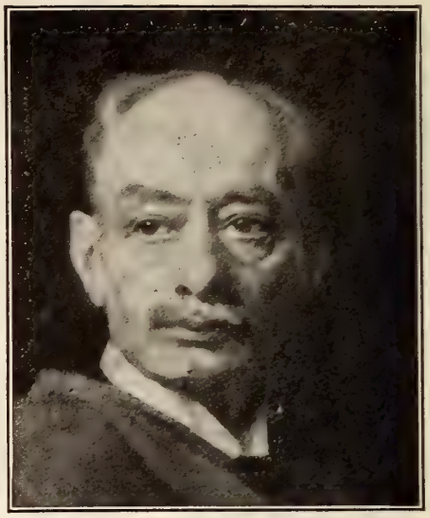

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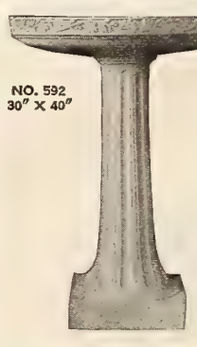

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The **"Guide"** will be all that the name implies, in addition to five pages of cultural instructions it will contain **Chapter Five "Evolution of the Dahlia."** Your name and address on a Post-Card is all we ask for it.

J. J. BROOMALL

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I am making birdhouses for you because of years of experience in building houses that would attract the birds to my own home and to yours.

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Wren House, solid oak, cypress shingles, copper coping. 4 compartments, 28 inches high, 18 inches dia. Price $6.00.

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And the birds can help you—

Now is the time to make plans for the birds coming back. These feathered friends save trees and shrubs and plants from thousands of insect pests. You need them. Of course everyone loves the birds—you want to make them neighbors, year after year. That is what Dodson Bird Houses do.

Birds are strangely particular. A lifetime's study has made Mr. Dodson authoritative on both Bird Houses and birds. His houses are all many times proven.

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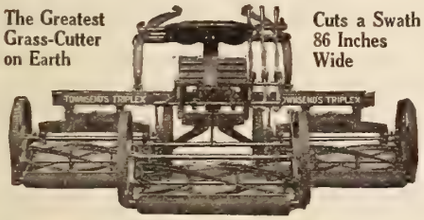
The Greatest Grass-Cutter on Earth

Cuts a Swath 86 Inches Wide



Floats Over the Uneven Ground as a Ship Rides the Waves

One mower may be climbing a knoll, the second skimming a level, and the third paring a hollow. Drawn by one horse and operated by one man, the TRIPLEX will mow more lawn in a day than the best motor mower ever made; cut it better and at a fraction of the cost.

Drawn by one horse and operated by one man, it will mow more lawn in a day than any three ordinary horse-drawn mowers with three horses and three men.

Does not smash the grass to earth and plaster it in the mud in springtime, neither does it crush the life out of the grass between hot rollers and hard, hot ground in summer, as does the motor mower.

The public is warned not to purchase mowers infringing the Townsend Patent, No. 1,209,519, December 19th, 1916.

Write for catalogue illustrating all types of Lawn Mowers

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IN CAR LOTS

Varieties

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It interprets the new tendencies, points out the new creations of flower and plant life, talks on landscape designs and has very interesting departments bound to be of immense assistance to either the beginner or the advanced garden lover.

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THE TRUTH ABOUT A GARDEN

AFTER a day with the hoe, one is tempted to wonder whether the poets who warble so deliciously about gardens ever did more than sit in the shade and enjoy the view.

Cowper, of course, has left proof that he understood as well as loved a garden. In the "Task" he shows surprising familiarity with the technique of gardening, not forgetting "the stercoraceous heap." This may be foreign to poetry, but proves that Cowper was such a lover of the soil and its mysteries that in his eyes the manuring of the land was a necessary part of his description. Moreover, he knew the importance of the master's taste and direction:

"Strength may wield the ponderous spade,
May turn the clod, and wheel the compost home,
But elegance, chief grace the garden shows,
And most attractive, is the fair result
Of thought, the creature of a polished mind."

He lived in that golden age for country gentlemen when labor was cheap and abundant. His part was skill rather than force. That is where he had the advantage over most of us who hanker for a garden to-day. Perforce we must use brain and muscle too.

The truth is that a garden is a tyrant second to none. The arm chair enthusiast in the spring with his gorgeous seed catalogues sees before him a fairy garden beautiful as Eden. Prosaic details confront him at the outset. The bounteous earth, he learns, has produced crops for so many aeons that it must have manure as a tonic. No tickling of the soil will make it smile in harvest. Moreover, he finds that though all manure may look alike to city folk, there are degrees of lushness known only to the experienced. When he goes forth in quest of what has hitherto seemed to him a most distasteful object, he is amazed to discover that the gardener's point of view is so different. To the worker in the earth, manure is the summum bonum, the pearl of great price, which he eagerly searches for in barnyards far and wide. The supply is cornered before the amateur gets a load. No secret society guards its password more jealously than the most ancient craft of all-gardening. The stranger will be taken in and laughed at. To him will be delivered straw and rubbish, as useless as offensive.

With backaches vaster than ever imaginable, he finally gets his rows planted. The difficulties of keeping straight were never so great. A line, such as he has seen used, develops the queerest kinks before he reaches the end of the row. He flatters himself that when the plants are well grown his wobblings will be concealed. Later the conviction is forced upon him that time only accentuates his blunders. The Gladiolus persist in following the set given them at the start, proclaiming the beginner by their refusal to stand in line. The planting at last accomplished, he is tempted to sit back and leave the rest to Nature. But that implacable old dame plays no favorites. Pig-weeds race with the Poppies to see which will get a foothold first. The repentant planter toils feverishly after them. Those few hot nights when he rested did the mischief. He realizes that the story of Jack and the Beanstalk is no exaggeration. In his excitement he grabs the weeds only to find that the young Onions have

(Continued on page 357)

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Dr. D. T. McDougall will have several more interesting articles lavishly illustrated.

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(Continued from page 354)

been included in his haste. He had always thought gardeners very leisurely in their mode of working; why didn't the fellows speed up? City people would never get anywhere if they poked along. It dawns on him after viewing the damage wrought by his business methods that the speed limit governs in gardens as well as elsewhere. Seedlings are so easily upset. The weeds, on the other hand, sit tight as if, indeed, the devil was holding on to the roots.

The battle with the insects must be waged at the same time. In the vast movie of Nature there is something doing every minute. The Potatoes are standing in the morning green and healthy. By eventide they are festooned with reds silently marshalled out of the nowhere into your field. Hardly have you sprinkled paris green or some other poisonous compound as a salad dressing for the ensuing young beetles, when the Cauliflowers are attacked. While you are preparing the special diet for the cabbage worm, aphis settle noiselessly on your Sweet-peas and Roses, causing a deathly anemia.

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By persistence and that kind of genius which consists of an infinite capacity for taking pains, the weeds and the insects may be beaten. But like Mark Twain, we are unable to do anything about the weather. The wind bloweth where it listeth, even though the Corn be laid low, never to stand again. Too hot or too damp—the city folk think the farmer's complaints about the weather are a joke. Somehow or other the people in the towns must be made to realize that rain means more than spoiling the ball game. Let them cultivate even a small plot themselves and see how for the first time they understand that weather reports are really bulletins of Fate. The city man for all his conceit has only to match his wits against his neighbor's. The gardener is battling single-handed with all the mysterious forces of the universe.

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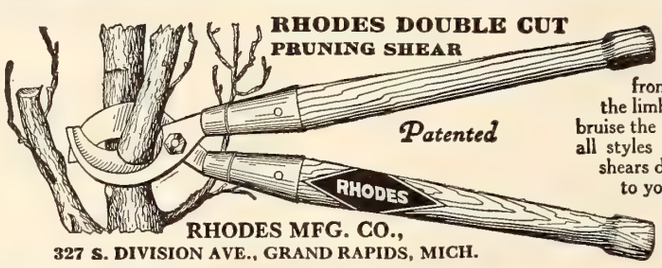

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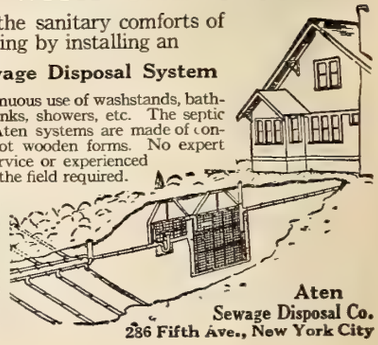

Aten Sewage Disposal Co.
286 Fifth Ave., New York City

Delicious Blueberries
—from Your Own Garden

IT can be done! Until recently Blueberries were counted among the most difficult to grow fruits. But we finally established them in our nursery. By repeated transplanting, we perfected the root system of the plants. And now, *you* may grow Blueberries as easily as any other garden berries. Starting with our nursery grown plants, all of which come with carefully burlapped roots, assures success under all conditions.

Absolutely Hardy—Rapid Growers—Heavy Bearers

The plants will bear the first or second year, depending upon soil and season. The plants ultimately grow 5 to 8 feet tall and are literally loaded with delicious fruits. In both size and flavor, the Blueberry stands alone. They are full of delicious, juicy flesh that brings to you the twang of the wild outdoors. For making pies, for canning, for preserving, for eating them in any way whatever, they are simply unsurpassed.

Extra fine, well-rooted, nursery-grown plants, balled and burlapped, at $2.00 each; $20.00 per dozen; $150.00 per 100

A Landscape Service of Broad Character

Whether you plan fruit gardens, orchards or ornamental planting of home grounds, it will be a pleasure to assist you in getting the most out of every planting plan. We maintain a staff of horticulturists whose advice will assist you to successfully carry out any garden plan.

For the special convenience of our clients within a radius of 100 miles of New York we have established a New York City Office, in the National City Building, Madison Avenue at 42nd Street. It will be a pleasure to help with act and advice from this office.

A Golden Yellow Raspberry destined to Make Many Friends!

We think of "Golden Queen" as the most delicious of all yellow Raspberries. In this we are sustained by hundreds of our customers who have planted it upon our suggestion. The berries are large, with few seeds in evidence. They are of most appetizing appearance but the delicious aroma of the juicy flesh will cause both appearance and size to be looked upon as minor qualities. As a table berry Golden Queen rules supreme.

Strong, well rooted, ready to bear plants, $3.00 per doz.; $20.00 per 100

MAYO NURSERIES, Inc.

Ellwanger & Barry Bldg. **ROCHESTER, N. Y.**

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World's Best Trees and Plants for the Home Grounds

Burpee's Sweet Peas

Burpee's Floradale Purple

New Sweet Pea for 1922

Floradale Purple is of immense size and exquisite form. The color is a rich shade of rosy purple with a lustrous and bright sheen. It blooms freely and makes a strong, vigorous growth.

Packet (20 seeds) 25 cents

Burpee's Giant White

New Sweet Pea for 1922

Giant White is well and truly named. The flowers are a glistening white, gigantic in size and of exquisite form. It is impossible to imagine anything more charming than this new Giant White.

Packet (20 seeds) 25 cents

Burpee's Scarlet Duplex

New Sweet Pea for 1922

The name "Scarlet Duplex" describes briefly both color and form. The magnificent flowers are rich glowing scarlet which do not burn even in the hottest sun. Usually the 3 lower blooms are double.

Packet (10 seeds) 25 cents

Two packets each of the above Three Grand Novelties (6 packets in all) will be mailed to any address postpaid for $1.00

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